FOOD PRODUCTION IN AFRICA: THE INTERNATIONAL CHALLENGE

HEARING

BEFORE THE

SUBCOMMITTEE ON AFRICAN AFFAIRS

OF THE

COMMITTEE ON FOREIGN RELATIONS

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FOOD PRODUCTION IN AFRICA: THE INTERNATIONAL CHALLENGE

FRIDAY, AUGUST 6, 1982

UNITED STATES SENATE,
SUBCOMMITTEE ON AFRICAN AFFAIRS OF THE
COMMITTEE ON FOREIGN RELATIONS,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:35 a.m., in room 4221, Dirksen Senate Office Building, Hon. Nancy Landon Kassebaum (chairman of the subcommittee) presiding.

Present: Senators Kassebaum and Boschwitz.

Senator KASSEBAUM. The hearing will come to order.

I am so pleased that Senator Boschwitz is joining me this morning, because on a Friday somehow everybody tends to leave town. I felt that this was a very important hearing, and it is of great interest to Senator Boschwitz and me, because, as Senators who represent agricultural States, we realize the importance of food production. This hearing today is an oversight hearing on the food production situation in Africa.

International assistance for Africa's agricultural sector amounted to almost $5 billion between 1973 and 1980, yet the average African had considerably less to eat at the end of that period than he had at the beginning. It seems very alarming to me that per capita food production in Africa has fallen by 1.4 percent each year over the past decade.

If this trend continues through the remainder of this century, almost one-quarter of sub-Saharan Africa's food needs will have to be imported. Although some of these needs can be met by commercial transactions, there will undoubtedly be an ever-increasing demand for food aid grants or sales of food on concessional long-term credit.

A recent study by the International Food Policy Research Institute claims that Africa's food production shortfall will be manageable until 1985, but will become staggering by the end of the century. Obviously, the long leadtime necessary to implement a development strategy in the field of agriculture to avert a crisis at the end of this century means that the international donor community and the African nations must begin immediately to develop and implement policies that will increase food production. A sense of urgency, I believe, is required.

These hearings are not seeking to place blame on anyone, but are really trying to analyze the problem, and search for some answers and ways that we can best assist with this problem, not only

in the next couple of years, but taking the longer look for the next decade ahead.

Rather, what we are looking for is to discover how best we can assist in finding and developing adequate food supplies for Africans. This question I believe, lies at the heart of economic and political stability in Africa because, at this particular point in time, agriculture is the bedrock of the African economy.

Our first witnesses this morning that I wish to welcome are Mr. Alexander R. Love, Deputy Assistant Administrator for Africa, of the Agency for International Development, and Ambassador Frank Wisner, Deputy Assistant Secretary for African Affairs of the Department of State.

It is a pleasure to welcome you both here this morning as the first panelists.

There will be a second panel consisting of Prof. Elliot Berg, Dr. Ernest Loevinsohn, and Dr. Dirck Stryker.

Thank you very much for coming, Ambassador Wisner and Mr. Love. I do not know which of you would prefer to start off first.

Mr. LOVE. I would defer to the Ambassador.

STATEMENT OF HON. FRANK G. WISNER, DEPUTY ASSISTANT SECRETARY FOR AFRICAN AFFAIRS, DEPARTMENT OF STATE

Ambassador WISNER. Good morning, Senator Kassebaum and Senator Boschwitz.

I appreciate this opportunity to explain the significance of sub-Saharan Africa's food problems to our broader foreign policy concerns. I hope in the course of my remarks that I will be able to address some of the issues that you raised, Senator Kassebaum, in your opening statement.

The combined impact of rising oil prices, global recession, and declining per capita food production has brought many African countries to the brink of financial and political chaos. According to a recent Department of Agriculture study, the cost of African grain imports rose nine-fold between 1960 and 1978. The latest figures we have show that sub-Saharan African nations, once largely self-sufficient in food, now pay a higher bill for food imports than for their more publicized imports of oil.

There is widespread agreement that without a strong agricultural base, political stability will not hold, and African development will remain a chimera. Although some African countries enjoy a comparative advantage in cash crop production, the most obvious and terrible consequence of agricultural stagnation is food shortage and malnutrition. We, the United States, have a political stake in Africa's food problem. Food shortages are only one element of political instability. There are other factors. But Africa has the world's lowest food production growth rate, and food production lags far behind Africa's population growth.

Africa faces severe food shortages for the remainder of the century. The increasing inability of African governments to insure a steady supply of food can and does spark political instability, and unfortunately, we have far too many examples. Let me mention a few specific cases of Africa's food problems as they affect good friends and nations where we have political and strategic interests.

In Sudan, whose cooperation is essential both to our Middle East policy and our interests in the Indian Ocean, massive food imports have been a major factor in bringing that country to the brink of default. Population growth has significantly outstripped food output over the last two decades. In Nigeria, black Africa's most populous country, and our second largest source of imported oil, declining agricultural production has necessitated food imports of such magnitude as to threaten the gains derived from oil wealth. The United States-Nigeria Joint Agricultural Consultative Committee has been formed to bring together experts from the public and private sectors in both countries to promote greater American involvement in Nigeria's agricultural sector through increased technology transfer, investment, and cooperation.

In Liberia, our oldest and closest friend in Africa, food consumption has steadily outpaced production. Civil unrest resulting from rice shortages contributed directly to the downfall of the Tolbert regime in 1980. In the recent past, the Sahelian countries experienced massive starvation. Chronic food deficits continue to weaken national resilience and create opportunities for Libyan subversion.

In Zaire, one of Africa's largest and potentially wealthiest nations, and the source of vast mineral wealth, agricultural stagnation has taken a double toll, reducing both food supplies and the output of cash crops for export, and in the process generating adverse political pressure.

Zambia is one of the front-line states working with us to seek a peaceful settlement to the conflict in southern Africa.

Senator BOSCHWITZ. Pardon me, Ambassador, but which country did you talk about just before Zambia?

Ambassador WISNER. Zaire.

In less than 10 years, Zambia has moved from a position of food exporter to an importer of almost half its annual consumption. We have mounted a major effort to help that government reinvigorate its sagging agricultural sector through our aid program, but there, as elsewhere in Africa, much remains to be done.

Let me make a final point about the politics of food. It is highly relevant that while nations like Libya and the Soviet Union can do little to solve Africa's food problem, they can do much to exploit the resulting instability by undermining our interests and relationships.

The reasons for the food crisis in Africa—for per capita agricultural output levels have fallen by about 1 percent per annum over the last decade, and were stagnant during the 1960's—are well known and will be described in depth in Ray Love's testimony which you will hear shortly. They encompass shortage of infrastructure, technology, and skills, prevalence of poor soils, desertification and erosion, and lack the necessary equipment, effective extension services, and agricultural research.

In addition, it is now generally recognized by both development experts and by many African leaders that unwise government policies which favor consumers and penalize farmer-producers must bear a major share of the blame. These policies have denied producers a fair price for their product, arbitrarily taxed exporters of cash crops by means of overvalued local currencies, subsidized urban consumers at the expense of rural producers, and burdened

agriculture with inefficient state agencies which dominate the transport, marketing, and processing of output.

My colleague from AID will go into more detail on these policy issues and what AID programs can do to contribute to an alleviation of those problems. I would simply underscore that the challenge we face in attempting to help Africa deal with that dimension of its food problem is formidable.

As we know from our own domestic experience, unwise use of resources rapidly generates powerful political constituencies. It is no different in Africa. Politicians have favored cheap food for urban consumers because the welfare of city dwellers impacts directly on the stability of governments. State corporations in the food trade rapidly become oriented toward employment rather than toward efficiency. Overvalued currencies favor certain classes of importers, and the very act of devaluation, while it may make economic sense, is politically very difficult to sustain.

In short, the promotion of better economic policies, policies which will motivate farmers to grow more, may result in long-term political stability, but for the short term, this effort requires self-sacrifice and much courage on the part of political leaders. Sudden or insensitive behavior on the part of aid donors can have a destructive effect on the political fortunes of our best friends.

No two cases in Africa are alike. Each country is unique, as are its particular problems and the solutions best suited to them. I would draw four general conclusions regarding Africa's food crisis as it affects our broader foreign policy concerns and our policy approach to these concerns.

First, helping African nations to overcome their food problem is central to our foreign policy objectives in Africa. There is the closest coordination between the strategies of the Department of State, AID, and the Department of Agriculture in dealing with this awesome situation. The concern that we see here in Washington is fully shared by our ambassadors in the field, and by our AID mission directors. We must pool all the skills and resources that we can muster, and at the same time scrupulously protect those resources which the Congress votes and we invest.

Second, no foreign entity, whether bilateral or multilateral, can legislate or proclaim solutions to Africa's problems. This is a field where persuasion, education by example, and quiet diplomacy geared to local conditions are just as essential as in the most delicate peace negotiations.

Third, we must not expect fast, easy, or cheap solutions. Gradual tactics are required if we are to avoid the risks of destabilizing our friends. Expert knowledge of the local scene as well as technological expertise is another prerequisite, and, before African governments can make tough choices, they must be assured of the resources, in part through our aid programs, to build the institutions and train the manpower which will be needed to provide underpinning for better policies. We must plan for the long haul, and be constant in our support and attention if we are to convince Africa that we mean business and expect African governments to act likewise.

Finally our Public Law 480 programs are a vital tool providing us with the food resources to help Africans bridge the gap until the

results of longer term development efforts can take effect, and at the same time generating local currency resources which are a major source of support for the agricultural development effort itself.

There is a movement afoot in Africa today which recognizes that state socialism has failed to improve the lot of nations and their people. There is a growing willingness to accept that reliance on market forces, where it has been tried, has succeeded. Governments which in the past have proudly called themselves Marxist today are moving slowly but surely toward a greater reliance on free markets and more reliance on the private sector.

Only by encouraging these movements, nurturing them where we can, advising but never dictating, can we help Africa to help itself. Our own interests and those of our many friends in Africa require of us a maximum effort implemented with maximum care and maximum tact. I am confident that we can look forward to the support of the Congress as we continue in this process.

Thank you, Senator.

[Ambassador Wisner's prepared statement follows:]

PREPARED STATEMENT OF HON. FRANK G. WISNER

Madame Chairwoman, Members of the Committee, I appreciate this opportunity to explain the significance of sub-Saharan Africa's food problems to our broader foreign policy concerns. The combined impact of rising oil prices, global recession and declining per capita food production has brought many African countries to the brink of financial and political chaos. According to a recent USDA study, the cost of African grain imports rose nine-fold between 1960 and 1978. The latest figures we have show that sub-Saharan African nations—once largely self-sufficient in food—now pay a higher bill for food imports than for their more publicized imports of oil. There is widespread agreement that without a strong agricultural base political stability will not hold and African development will remain a chimera. Although some African countries enjoy a comparative advantage in cash crop production, the most obvious and terrible consequence of agricultural stagnation is food shortage and malnutrition.

We have a political stake in Africa's food problem. Food shortages are only one element of political instability. There are other factors. But Africa has the world's lowest food production growth rate and food production lags far behind Africa's population growth. Africa faces severe food shortages for the remainder of the century. The increasing inability of governments to ensure a steady supply of food can spark political instability and we have unfortunately too many examples.

Let me mention a few specific cases of Africa's food problems as they affect good friends and nations where we have political and strategic interests.

In Sudan, whose cooperation is essential to both our Middle East policy and our interests in the Indian Ocean, massive food imports have been a major factor in bringing the country to the brink of default. Population growth has significantly outstripped food output over the last two decades.

In Nigeria, black Africa's most populous country, and our second largest source of imported oil, declining agricultural production has necessitated food imports of such magnitude as to threaten the gains derived from oil wealth. A Nigeria-U.S. Joint Agricultural Consultative Committee has been formed to bring together experts from the public and private sectors in both countries to promote greater U.S. involvement in Nigeria's agricultural sector through increased technology transfer, investment, and cooperation.

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In Zaire, one of Africa's largest and potentially wealthiest nations, and the source of vast mineral wealth, agricultural stagnation has taken a double toll, reducing

both food supplies and the output of cash crops for export, and in the process generating adverse political pressures.

Zambia is one of the front-line states cooperating with us to seek a peaceful settlement to the conflict in Southern Africa. I can testify from recent experience as Ambassador there that we have mounted a major effort to help the government reinvigorate a sagging agricultural sector through our aid program. Much remains to be done.

The reasons for the food crisis in Africa—for per capita agricultural output levels which have fallen by about 1 percent per annum over the last decade, and were stagnant during the 1960's—are well known and will be described in depth by Ray Love of AID. They encompass shortage of infrastructure, technology and skills, prevalence of poor soils, desertification and erosion, and lack of necessary equipment, effective extension services and agricultural research. In addition it is now generally recognized, both by development experts and by some African leaders, that unwise government policies which favor consumers and penalize farmer-producers, must bear a major share of the blame. These policies have denied producers a fair price for their product, arbitrarily taxed exporters of cash crops by means of overvalued local currencies, subsidized urban consumers at the expense of rural producers, and burdened agriculture with inefficient state agencies which dominate the transport, marketing and processing of output.

My AID colleague will go into more detail on these policy issues, and what AID programs can do to alleviate them. I would simply underscore that the challenge we face in attempting to help Africans deal with this dimension of their food problem is formidable. As we know from our own domestic experience, unwise use of resources rapidly generates powerful political constituencies. It is no different in Africa. Politicians have favored cheap food for urban consumers because the welfare of city dwellers impacts directly on the stability of governments. State corporations in the food trade rapidly become oriented toward employment rather than efficiency. Overvalued currencies favor certain classes of importers, and the very act of devaluation, while it may make economic sense, is politically difficult to sustain.

In short, the promotion of better economic policies—policies which will motivate farmers to grow more—may result in long term political stability; but for the short term this effort requires self-sacrifice and much courage on the part of political leaders. Sudden or insensitive behavior on the part of aid donors can have a destructive effect on the political fortunes of our best friends. No two cases in Africa are alike—each country is unique, as are its particular problems, and the solutions best suited to them.

I would draw four general conclusions regarding Africa's food crisis as it affects our broader foreign policy concerns.

First, helping African nations to overcome their food problem is central to our foreign policy objectives in Africa. This is a concern shared equally by Ambassadors and AID Mission Directors, one which demands the pooling of all the skills and resources that we can muster. It is highly relevant that while nations like Libya and the Soviet Union can do little to solve the African food problem, they can do much to exploit resulting instability by undermining our interest and relationships in Africa.

Second, no foreign entity, whether bilateral or multilateral can legislate or proclaim solutions to African problems. This is a field where persuasion, education by example, and private diplomacy, geared to local conditions, are just as essential as in the most delicate peace negotiations.

Third, we must not expect fast, easy or cheap solutions. Gradual tactics are required if we are to avoid the risks of destabilizing our friends. Expert knowledge of the local scene, as well as technological expertise, is another prerequisite. And before African governments can take tough choices they must be assured of the resources, in part through our aid programs, to build the institutions and train the manpower which will be needed to provide underpinning for better policies.

Finally our Public Law 480 programs are a vital tool, providing us with the food resources to help Africans bridge the gap until the results of longer term development efforts can take effect, and at the same time generating local currency resources which are a major source of support for the development effort itself.

There is a movement afoot in Africa today which recognizes that state socialism has failed to improve the lot of nations and their people. There is a growing willingness to accept the reliance on market forces, where it has been tried, has succeeded. Governments which in the past have proudly called themselves Marxist today are moving slowly but surely toward greater reliance on free markets and the private sector. Only by encouraging these movements, nurturing them where we can, advising but never dictating, can we help Africa itself. Our own interests, and those of

our many friends in Africa, require of us a maximum effort implemented with maximum care and tact. I am confident that we can look forward to the support of the Congress as we continue with this process.

Senator KASSEBAUM. Thank you, Ambassador Wisner.
Mr. Love.

STATEMENT OF ALEXANDER R. LOVE, DEPUTY ASSISTANT ADMINISTRATOR FOR AFRICA, AGENCY FOR INTERNATIONAL DEVELOPMENT

Mr. LOVE. Thank you, Madam Chairman.

I have submitted a rather lengthy statement which I can either read or submit for the record.

Senator KASSEBAUM. Your full testimony will be inserted in the record. Any condensation would be appreciated.

Mr. LOVE. I have a few additional oral comments that I would like to make.

I would like to thank the subcommittee for the opportunity to discuss the problems of agriculture in sub-Sharan Africa and AID's efforts to contribute to an effective solution. Despite a tripling of real resources from the donors, African per capita food production declined through the seventies and continues to do so in the eighties. There is ample evidence that the development approaches which have been tried must be reviewed and revised, regardless of how well meaning their intent.

It is imperative that we focus our energies and priorities upon raising the productivity of African farmers. We believe that if we do this, the poor in Africa will gain permanent benefits which will grow and become the foundation upon which self-sustaining economic growth can be built. Of necessity, this requires us to measure our success or failure in a longer term context. It is not enough to mitigate the suffering of the poor. Our real task is to eradicate the causes of poverty and therefore the causes of suffering.

The policies of AID and the Africa Bureau are designed to cooperate effectively with those African governments which are prepared to eradicate the causes of poverty, but I think we must also face the reality that the determinants of success or failure lie largely in the hands of the African governments and not AID or the other donors.

For this reason, policy reform has become a major element of our efforts in Africa. Government discrimination against agriculture, both direct and indirect, must be reversed. Without such change, it is difficult to be optimistic. Very little has changed in the traditional agricultural sector, yet that is where the most promising potential for growth and productivity lies.

Institutions must be created which sustain the farmer with a continuous flow of research and technology which is effectively disseminated. Training must be available to assure that the farmers and therefore society at large benefit from research and new technology. The infrastructure must be developed which will allow for the efficient packaging, storage, processing, and distribution of agricultural products.

The private sector must substantially expand its role in the creation and distribution of goods and services which farmers require. Clearly, the parastatal organizations so common in today's Africa

have not done this. Africa needs the efficiency of the private sector. It needs a lessening of the burdens on government. It needs the expanded tax base associated with the growing private sector in order to absorb the humanitarian and development projects which will contribute to the continent's well-being.

We believe that the current emphasis of AID's programs on increasing productivity in African agriculture will strike at the heart of the problem. These efforts, supported by greater donor cooperation and coordination, require a long-term perspective. Changing the monetary, fiscal, and administrative structure of a country takes time. Development, testing, and dissemination of new seeds or techniques takes time. Expanding infrastructure and training people in modern methods takes time. But these are the essentials if we are to turn around the ominous trends in African agriculture and place the continent on the road to self-sustaining growth.

[Mr. Love's prepared statement follows:]

PREPARED STATEMENT OF ALEXANDER R. LOVE

It is a pleasure for me to appear before the subcommittee today to discuss the problems and promise of the agricultural sector in Africa, and some of the actions which we in the Agency for International Development have taken and are planning for the improvement of African agriculture, particularly food production, which is the object of the majority of our efforts.

Agriculture in sub-Saharan Africa is in crisis. It is the only major region of the world where per capita food production is declining. Per capita food production in the 1960's remained stagnant, and throughout the 1970's it has declined by about one percent per annum. That trend has carried over into the 1980's. Not only has food output per capita declined, but output relative to rural population has also declined, suggesting that labor productivity has done likewise. The increases in food production which have occurred have been largely associated with cultivation of new, and presumably more marginal land; a process which cannot continue indefinitely.

These conditions have been accompanied by burgeoning food imports, financed both concessionally and commercially, and a continued deterioration of nutritional standards throughout the continent. To make matters worse, sub-Saharan Africa's exports and therefore its ability to meet shortages through imports, have been declining at a rate −0.8 percent per annum throughout the 1970's.

These events occurred despite the fact that the real value of Official Development Assistance (ODA) received by sub-Saharan African countries during the 1970's nearly tripled, and the ratio of ODA to Gross Domestic Product (GDP) nearly doubled. These data understate the volume of development assistance because they refer to net disbursements of medium- and long-term loans and grants, but do not include technical assistance.

The evidence is conclusive that we must look to factors in addition to improving agricultural production technology and training efforts and examine the elements of the economic and administrative context in which these events have been occurring. We must also look beyond international economic conditions such as high oil prices and slack demand for African exports. These factors have contributed to the problem, but they did not cause it. The World Bank lists three areas of domestic policy inadequancies which have played a critical role in the development of Africa's agricultural crisis. They are, (1) trade and exchange policy which has over protected industry, held back agriculture, and absorbed much administrative capacity; (2) too little attention paid to administrative constraints in mobilizing and managing resources for development; and (3) a consistent bias against agriculture in price, tax and exchange rate policies. To this must be added the failure of donors, all donors, to adequately coordinate their efforts and focus the attention of African governments and the donor community on the policies which have contributed to the agricultural crisis in Africa.

Trade and exchange policy.—All African countries have trade and foreign exchange controls to a greater or lesser degree. Half of the countries of sub-Saharan Africa have artificially controlled exchange rates and inconvertible currencies with

the attendant illegal market for their currency. All control the licensing of imports as a means of allocating foreign exchange.

Currency inconvertability, and the overvalued exchange rates which such inconvertability supports, is usually defended on a social equity grounds. It is argued that by maintaining an artificially high exchange rate and control of import licenses, the use of foreign exchange can be channeled from consumption, in particular luxury consumption, to socially desirable investment, or to provide "necessities" at "low prices" which the poor can afford.

Whatever the theoretical merits of these arguments may be, in practice, overvalued exchange rates have proven counterproductive to development, and provided disincentives and distortion in the agricultural sector.

An artificially high exchange rate means that imports will be favored and exports discouraged. The greater the overvaluation, the greater the distortion of the economy and the disincentive to produce and invest. Where countries with malaligned exchange rates are food importers, those imports depress food prices, encourage consumption and discourage local production.

At the same time, because there is now an artificial "shortage" of foreign exchange, imports are "rationed" through the licensing process. While such a process could in theory offset the disadvantages of the agricultural sector, in fact the opposite has occurred. African governments have been strongly biased against agriculture and in favor of state owned industrial enterprises. The result has been a chronic and worsening shortage of agricultural inputs, including machines, spare parts, pesticides and seed. While it can be argued that the exchange rate subsidizes agricultural inputs and thus at least partially offsets depressed agricultural prices, in practice the net result of overvalued exchange rates has been distinctly negative.

The same is true, only to a lesser extent, in those countries with convertible currencies, but which ration import licenses administratively. The agricultural sector has been penalized in favor of the industrial sector.

Credit policy has likewise penalized agriculture. For almost every country, interest rates are administratively set below the rate of inflation and are therefore negative. This discourages savings and capital formation and encourages consumption and/or capital flight. The administrative allocation of credit has heavily favored the financing of government deficits and usually inefficient parastatal industries. Like foreign exchange, even when credit is available, it is often available at the wrong time in the agricultural cycle.

Trading policy.—Virtually all of the countries in Africa rely on government parastatals to purchase agricultural products at "official" prices. Of 39 countries studied by the World Bank, only two relied upon the private sector for the importation of agricultural inputs (Zimbabwe and Swaziland), 19 had mixed government and private import regimes, and 18 were government monopolies.

Official prices below market are mandated for some or all exports in virtually all of the countries, and for food crops in the vast majority of the countries. The capacity of governments to effectively commandeer crops at nonmarket prices varies. In some it is minimal, and the effect is similar to a producer tax on those caught by the net. In others the effect is far greater. All other things being equal, the greater the capacity of the government to impose low prices, the greater the damage to the agricultural sector.

Likewise, the farther official prices are out of line with market prices, the greater is the incentive to corruption and for sale of goods in the "parallel" market, or to smuggle them to a neighboring country. This applies to both food and export crops.

The World Bank Report indicates the impact of unsound agricultural pricing policies. "It is now widely agreed the insufficient price incentives for agricultural producers are an important factor behind the disappointing growth of African agriculture. The importance of price policy comes out strongly in project experience. A recent review of 27 agricultural projects undertaken by the World Bank noted the almost overriding importance of producer prices in affecting production outcome and production levels, often cutting across the quality of technical packages and extension services. Seven out of nine projects implemented under favorable prices achieved or surpassed their production objectives; 13 of the 18 under unfavorable prices failed to do so. This idea is also borne out strongly in microlevel studies, which indicate substantial farmer responsiveness to price.

Other factors.—The lack of adequate infrastructure is a pervasive problem. First, the lack of adequate road, market places, storage facilities, transportation equipment and processing units is a major disincentive to production in many countries. Second, resources, both financial and technical, are too often not available to properly maintain those elements of infrastructure that are in place now. In some countries such as Ghana and Zaire, there is evidence that road and transportation equip-

ment have been allowed to fall into such disrepair that farmers are reverting to subsistence agriculture because production for market is no longer profitable or in some cases possible.

While we normally think of developing countries as having an abundance of labor, in Africa the absence of adequate manpower at key times in the growing cycle is a constraint on production in certain areas. This is largely the result of migration of males to urban centers in search of work, leaving behind the aged and the women and children. Adequate farm prices and policies could do much to slow down this rural urban migration with all of the problems it creates.

The effect of various modes of African land tenure on incentives to invest in the land also requires far more careful study.

The evidence speaks for itself. For 7 of the 14 leading crops in Africa, yields per hectare declined in the period 1977–79 versus 1969–71. Four of the seven crops where yields increased were export crops; tobacco, sugar, groundnuts, and tea. Of the three food crops which registered increases in yields during this period, two, sorghum and pulses were still only 93 percent and 90 percent respectively of the yield in the 1961–63 period. Of the food crops, rice alone registered a yield per hectare increase in both periods.

In only 2 of the 14 leading crops did Africa register yields per hectare greater than world wide yields and those of other developing countries in the period 1977–79. These were tea and sugar cane. African yields relative to world yields per hectare are in 11 of the crops were less in the period 1977–79 than in 1961–63.

These relative declines are all the more striking in light of the fact that African fertilizer consumption increased at a compound annual rate of 23.1 percent per annum in the period 1962–66 through 1969–71 and at an annual rate of 9.7 percent per annum during the period 1969–71 through 1977–78.

Clearly the return to the factors of production is declining. It is also evident that the economic policies and administrative practices of the governments in Africa play a key role in the decline. It is equally evident that the donors must reassess the effectiveness of their efforts in the light of these bleak statistics.

It is worth emphasizing again what has been noted above; in those instances where governments have relied upon price incentives, African farmers in the traditional as well as the commercial sectors have responded well. The recent dramatic response of the traditional sector to price incentives in Zimbabwe is only one case in point.

It has become clear to us in AID, our colleagues at the World Bank, and other donors that if very serious consequences in agriculture and therefore in the economies of Africa are to be avoided or mitigaged, it is essential that African governments promptly adopt economic and administrative policies which are conducive to maximizing agricultural productivity, particularly in the traditional sector which has so long been ignored. Donors must actively encourage such change with both program and project support. In the absence of such changes, it is difficult to be optimistic about the success of technial agricultural programs and projects.

The picture is not unrelievedly bleak. The recent study of food problems in Africa performed by AID together with USDA, and that of the World Bank have had a significant impact upon African and donor governments alike. There is evidence that some African governments are seriously studying their agricultural problems and how they can solve them.

AID stands prepared to help. AID's four areas of emphasis, policy reform, private sector development, institution building and agricultural development are designed to get to the heart of Africa's agricultural problem. Because of the urgency of the situation, it is essential that increased productivity be the central objective of our efforts.

Besides the economic constraints noted above, there are also major administrative and technical constraints that are retarding agricultural growth. These constraints in turn reflect the lack of institutions and infrastructures in sub-Saharan Africa required to support agricultural development. On the institutional side, there is inadequate skilled manpower both at the administrative and technical level. Some African countries have only a handful of skilled agriculturalist and/or administrators to support an entire agricultural sector. Most African countries have not yet tapped the potential resources of the private sector. Too much of African agriculture is managed by the State. The problem is aggravated by the fact that the public sector usually does not have the financial or managerial resources to carry out this responsibility. Research, extension and training are the critical areas of institutional needs of most African countries.

Food and agricultural production are the centerpiece of the Africa Bureau's assistance strategy. The Bureau's response to the deteriorating food and agricultural situation is to focus on the following program priorities:

1. Support for the creation of national policies and programs which rely largely upon free market mechanisms to give African farmers incentives to expand agricultural output, especially food.

2. Building of self-sustaining African institutions that provide appropriate technology, inputs and services at the time and in the quantity necessary for increased production and distribution of agricultural and food products, with particular emphasis on expanding the role of the private sector in these areas.

3. Support for institutional and human resources development programs that provide the means for greater participation by farmers in the development process, including policy planning, to build popular support and acceptance of policies, administrative procedures and programs necessary for self-sustaining growth.

This strategy is directed at the basic causes of poor performance of the agricultural sector. While some elements of the strategy particularly in the policy area should result in short term increases in agricultural production, a significant portion of this strategy is of necessity of a long term nature. It is appealing, as some quarters have suggested, to believe that a massive influx of resources directed at "getting food growing in Africa" would provide a quick and relatively easy solution to Africa agricultural, and by proxy, economic problems. Unfortunately, a more detailed examination of the African agricultural situation would indicate that however appealing such an idea may be it will not work. For this reason, AID proposes to make a long term effort to assist in the establishment of the necessary programs and structures to create the appropriate policies, technology, institutions and infrastructure that will form the basis of future sustained agricultural growth.

At the same time that AID commits itself to stay the course for this long term effort, the Agency is equally aware of the need to address the more immediate needs created by the economic crisis prevalent in so many African countries. African governments, together with the international donor community, including AID, must find ways of breaking the vicious cycle that typifies too much of African agriculture.

While this situation is difficult, it is not impossible. Efforts now being made by AID, and others of the international donor community including the World Bank and the IMF, to work more closely with African governments, offer hope that African agriculture can begin to achieve its enormous potential.

To accomplish this goal, AID, and particularly the Africa Bureau, has substantially increased its efforts to promote donor coordination of both programs and policies. This is a large task. There are no less than 56 donors in Africa, each with its own policies and perceptions of the problem.

Most of the efforts addressing immediate economic questions now underway in Africa link the needs for economic and administrative policy reforms with long term restructuring of the economy. AID has been actively participating in several of African countries' consultative groups. These consultative groups provide a mechanism for joint examination of the overall political and economic situation, including the agricultural sector, among donors and a government. This examination can be used as a basis for coordinated action to address the urgent economic needs of the country concerned. AID is now working with the five currently active consultative groups in sub-Saharan Africa.

Besides efforts in consultative groups, AID works closely, formally and informally, with the IMF on extended fund facilities arrangements and with the World Bank where it has made or is making structural loans. In Uganda, an AID sponsored study of coffee production and marketing was used by the IMF as part of setting conditions for an extended facilities. In Liberia, AID is in the process of completing a joint agricultural sector survey with the World Bank. This joint effort will serve as a basis for policy reforms and determination of investment needs as part of an economic restructuring effort by the IBRD in Liberia.

AID took the lead this year in its role as chairman ad iterim of the CDA (Cooperation for Development in Africa). CDA is a coordinating mechanism consisting of the seven major OECD donors in Africa; Germany, France, Britain, Belgium, Canada, Italy and the United States. AID recently sponsored a conference in Abidjan between CDA donors and African development experts at which means for more effective coordination among donors were discussed. The proceedings of that conference will be a basis for the policy discussions at the CDA plenary conference to be hosted by AID in Washington this Fall.

Substantial progress has already been made in two areas where the United States has provided active leadership by using the CDA mechanism to assure that the bilateral programs of the donors are mutually consistant and reinforcing. AID is pro-

viding leadership in agricultural research, and in forestry/fuelwoods. We believe that the practical progress made by AID in the CDA through focusing on individual sectors, country by country, offers a promising mode for the expansion of donor coordination in a non-confrontational manner which will be well received by host governments.

AID is making a major effort on the CDA agricultural research initiative. In a series of meetings of CDA technical working groups, an initial plan of action has been agreed to. Five major agro-climatic regions in Africa have been delineated and responsibility among CDA member states for each region determined.

In addition to the above, AID is continuing its support of regional Sahel programs through the Club du Sahel/CILSS and the Southern Africa Development Coordination Conference, SADACC, in Southern Africa. An emerging initiative for regional programs for AID is the development of "common themes" around which coordination and networking of AID programs and projects in agriculture can occur. This common theme approach promises to provide greater and more broadly based results for AID's agricultural development efforts in Africa. Eight common themes have been identified and prioritized. These are: (a) Farming system approach to applied research; (b) Commodity research (sorghum, millet, maize, cossava, cowpeas, phaseolus beans, peanuts); (c) Agricultural sector planning/policy analysis, including landuse planning; (d) Agro-business development (constraint removal, market services, management skills); (e) Water management in arid and semi-arid areas; (f) Pest management (major food crop pests); (g) Agro-forestry; and (h) Livestock development (major diseases, forage crops, draft powered implements).

As noted elsewhere, a proper policy environment is the most important issue in increasing agricultural development in most African countries. An essential element of the long term answer to Africa's problems is to provide governments with the capacity for data collection, policy analysis and policy making. AID is undertaking a major increase in project activity to develop this ability. We are substantially expanding our efforts in this regard. There are now on-going or planned policy/planning projects in 16 of the 32 countries where AID is working in Sub-Saharan Africa.

In Rwanda, for example, AID is financing a project to carry out the first agricultural survey ever done in the country. Additionally, AID is also providing the means to analyze and use the data from this survey by Rwandan policy makers. This project is being undertaken with the U.S. Bureau of Census. In Kenya, AID has supported a policy analysis team from the Harvard Institute of International Development to advise the Kenyan Government on policy questions. Sudan also has a project in agricultural statistics and planning supported by AID. Land use and production related data are being collected and analyzed through the assistance of a U.S. Department of Agriculture team for use by the Sudanese Government to better develop policy related to land use and agricultural production.

Aside from the related activities, in the last year AID has undertaken a number of special initiatives related to the agricultural policy area. Six agricultural assessments were undertaken to help AID missions and host governments to develop assistance strategies and to examine effects of present agricultural policy. Under the Public Law 480 program several policy studies were undertaken. In Tanzania, for example, such a study was used as a basis to begin a serious policy dialogue with the Tanzania Government.

AID, working through the CILSS with France, is assisting the Malian Government to undertake a Food Sector Survey. The use of Food Sector Surveys has been promoted by the World Food Council as one way to get a comprehensive look at policies and issues related to the overall food situation of a country. The AID financed team was able to bring together key members of the Ministries of Agriculture, Plan, Finance and Commerce to focus not only on increasing agricultural production, but also on how the agricultural sector can provide the food or the foreign exchange to purchase food to supply the needs of the Malian population.

Finally, in Liberia, AID and USDA are working with the Liberian Government to provide a high level agricultural task force under the aegis of the initiative proposed by President Reagan at Cancun, Mexico last year. This task force will provide advice to the Government of Liberia on policy and other questions related to agriculture development and expansion of the private sector agriculture.

In the area of institutional development in sub-Saharan Africa, AID has put a major emphasis on agricultural research. There is relatively little viable technology to improve productivity of African crops, particularly in the traditional smallholder sector. An effective research capacity is essential to solving Africa's agricultural problems.

An earlier project in Kenya from 1963 to 1977 helped the Kenyans develop new maize varieties. The resulting "Kitale Maize" introduced in 1966 resulted in use of improved varieties of seed by 75 percent of Kenya's small farmers and virtually all of the commercial farmers. These varieties increased yields for small farmers by three to four fold. Large commercial farmers experienced yield increases of 25 percent to 30 percent. Use of these seeds spread throughout East Africa and changed the approach to maize breeding.

The regional research effort which AID has undertaken through CDA is complemented by another research related regional project which AID has just begun in Eastern and Southern Africa. It is a Farming System Project working through CIMMYT (the international research organization that produced the "miracle wheats" in Mexico). This project is to provide funding for a series of workshops, seminars and other forms of information exchange among the various research programs in Eastern and Southern Africa to encourage and support joint efforts among the countries and donors to address regional problems.

Besides regional activities, AID is funding major research projects in nine African countries. In Malawi, for example, a team from the University of Florida is working on a major research effort directed to smallholder production. Washington State University is developing a crop/livestock based farming system research program in Lesotho. A second phase of the Tanzania research effort is being launched to focus on field testing and farmer adoption of new varieties now developed. Regionalization of the research organization in Senegal is being undertaken through multi-donor support. AID is funding a team from Michigan State University to cooperate in developing an institutional structure to provide farm household information on research results and priorities.

Finally, institutions must build on a pool of qualified personnel. In recognition of this fact, AID is providing funding for participant training in most of our projects. Besides this, AID has begun an important new project to create a land grant type of agricultural university in the Cameroon. This is the first important center of higher learning in agriculture which AID has supported in sub-Saharan Africa in many years. Graduates of this university will provide the core technical and administrative personnel for the agricultural research and extension for both the private and public sector management requirements in the Cameroon, and to a lesser extent other African countries. Experience from India would indicate that this investment should have high return for Africa's agricultural sector and economy as a whole.

Internally, we are also working toward the establishment of more effective means of the coordination of the various elements of U.S. Government through closer consultations among AID, State, Treasury and the U.S. Governors at the IMF and the World Bank, to assure that the various elements of the U.S. Government are mutually supportive in their policies and programs.

In these coordinating efforts as well as in our bilateral programs, AID will make a maximum effort to support economic and administrative reforms which will facilitate the expansion of agricultural output. Particular attention will be given to support of government divestiture of parastatals, particularly the trading parastatals which have had such deleterious effects on agriculture. We believe that the private sector has a key role to play in building viable agricultural sectors in Africa. Special emphasis is being placed upon promoting, using and supporting the private sector wherever possible in all of our projects and programs.

We have also taken steps to assure that all of our Country Development Strategy Statements (CDSS), Annual Budget Submissions, and all project papers carefully review the policy context of the host country and the implications which that has for our strategies and programs. There is particular emphasis on the role of the private sector, not only because it is more efficient and productive than the public sector, but also because it frees up the scarce administrative talents of governments to perform the tasks appropriate to government.

Emphasis is being placed upon "policy dialogue." Obviously that will take a different form from country to country. But in view of the critical nature of the policy problem, we believe that it is crucial that our missions pursue the task of exerting constructive policy influence with our African friends whenever possible.

This is a tall order, and it is important for us to keep our limitations in mind. We are one of the major donors in Africa, but our bilateral ODA accounts for only 7 percent of total ODA. Offsetting that limitation is the leadership role which the United States has historically played and which is still welcome in most of Africa. But in the final analysis, we must recognize that Africans themselves must make the politically difficult fundamental changes which are necessary for AID's efforts to succeed.

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We believe that African receptivity to our approach is growing, as is the willingness of various donors to cooperate with one another. We believe that the current priorities and policy emphasis of AID are sound and relevant to the pressing problems of the African continent, and that together in cooperation with other donors and African governments, they offer hope of turning Africa's agricultural sector around and placing it on the road to modernization and prosperity.

We must recognize however, that there are no quick fixes to Africa's food crisis. The policy and institutional reforms required—the development of human and physical infrastructure—the development of new technologies all will take a long time. We must be prepared to stay the course if we expect the food problem in Africa to be significantly improved by the end of this century.

Senator KASSEBAUM. Thank you very much. I am struck by a couple of things that both of you said that certainly I think are very true, and by one, Ambassador Wisner, which you said, that the policies favored consumers at the expense of producers. This is frequently what we hear in this country in our farming communities as well.

Mr. Love, you said that the solution lies in the hands of the African nations, and not in AID and in our own efforts. Yet it is in coordinating our efforts, it seems to me, in lending assistance in improving technology and training and the processing that you mentioned, that lies at the heart of the hearing today—how we can utilize our influence, through our organizations and work such as AID, in coordination with our embassies, and in the total policy structure.

You mentioned Nigeria, Ambassador Wisner, and the erratic trade policy that has affected Nigeria, and maybe most of the countries. It strikes me as interesting that in Nigeria rice and wheat have seemed to double as a consumer commodity, and much of it has had to be imported, and they have vacillated between increasing imports which, of course, dramatically plunged their own producers' prices, to then cutting them off and trying to stabilize their own production. That pattern seems to have plagued Africa trade, it seems to me, more and more. I wonder what role there is for the private sector when there is an apparent inability to have some policy that is consistent.

Ambassador WISNER. I think one has to look at a problem like the one you mentioned in Nigeria in terms of quite a natural phenomenon, the change of demand, the change of taste with the urbanization, the phenomenon of urbanization that one sees throughout all the rest of the world. It is not untrue to say that one sees it in very striking dimensions in Africa.

As that takes place, urban consumers go for and look to certain types of food supplies that are simple and easy to consume and acquire and can be sustained and stockpiled and stored, and as a result products like bread and rice rise higher and higher in the urban consumer's demand for his staple consumption.

Now, when you turn that around, I think you have to talk about a strategy that satisfies the urban consumer, provides rice and wheat. In the case you mentioned of Nigeria, there are other staples elsewhere in the continent. Some of that can be done with small rural farmers. Some cannot. You have to look, therefore, for a balanced development strategy that provides both what is needed in the marketplace and is capable of being produced by the smaller farmer agricultural sector throughout the rest of the continent.

The United States can play a role in that regard. We are extremely skillful in the production of both commodities. We have technology we can share. We have private enterprise that is most effective in the production of those commodities, and we can be effective, furthermore, in bridging the gap, using resources like the Public Law 480 programs to help governments over this rough passage until domestic production can be increased and assist them in generating resources that can be used to invest exactly in those areas where the production will be required.

Senator KASSEBAUM. But production is declining.

Mr. LOVE. May I add a few comments to what the Ambassador has said? One of the problems with rice and wheat, which have been the predominant crops associated with the consumption rise in urban areas, is that these crops do not lend themselves as readily to growth in the agricultural environment of Africa as they do in the United States and in Asia, so there is a problem developing around the linkages between the consumer demands that are developing in the urban areas and the potential for actually growing these crops in the rural areas. The traditional crops of Africa, millet, maize, sorghum, et cetera, for which the climatic conditions are suitable, are the best crops in most cases.

There certainly is some potential for increasing wheat and rice production. But one of the problems that will have to be addressed is how to slow down the shift in consumer tastes that is taking place in the urban areas. If they get permanently hooked, so to speak, on wheat and rice, there is going to continue to be an import problem, even if domestic production of the other agricultural commodities takes place.

The other problem, of course, is that this creates a major problem with respect to linkages and incentives between the urban market and the rural producer. If the crop mix is not adequately balanced between the rural area and the urban area, you have the problem of the rural producers producing crops primarily for their own consumption on the farms, rather than beginning to move more into the market economy and producing for the urban areas.

So, we have a production problem, but we then have another, more serious problem, the shifting of actual consumption patterns, which actually weakens the tie between the rural producer and the urban areas that is necessary in the long run to help get this balance brought back into focus.

Senator KASSEBAUM. I think from what I have read that that is very true. It is a fascinating problem that seems to be at the heart of what lies ahead. You mentioned the need for processing along with technology, training, and so forth. Do you think there is a possibility that research could develop food processing technologies that could convert local crops into products that are marketable and somehow diminish the mismatch between what is grown and what is desired in the urban areas—a desire which in some ways we have helped to create, such as a desire for the wheat that we have utilized through Public Law 480? I do not know if that is the case, but perhaps we have helped create that demand. Do you see AID being involved in that type of effort?

Mr. LOVE. Last year, I think you were presented with one of the studies that AID did on food problems and prospects in sub-Sa-

haran Africa. At the conclusion of that study, one of the four elements that was pinpointed as a problem was the shift in consumer demands. Yes, it is something we feel we have to start focusing on, but unfortunately today we have not done much in the way of actually initiating research on that specific aspect of the problem. I am sure that something can be done through the expenditure of research efforts to shift some of the processing technologies, to make the foods that are grown there better suited to consumer demands. It may not completely solve the problem but it might help alleviate it to some degree.

Senator KASSEBAUM. Do you see the private sector being willing to assume some real risks in that area, the processing and working with the local production?

Mr. LOVE. Do you mean in the domestic African private sector?

Senator KASSEBAUM. Yes.

Mr. LOVE. Let me talk a little about the private sector, because one of the problems that continues to come up when we talk about the private sector is the issue of whether we are talking about U.S. investment, or the indigenous private sector.

Within the African Bureau, we feel that our greatest thrust will have to be toward developing the indigenous African entrepreneurs; that base is what is going to be necessary, particularly in the rural areas, to encourage increased production, and to improve distribution and marketing of agricultural products.

We do look to the U.S. private sector to help in areas where the United States has developed fairly sophisticated technology, but we feel that unless there is an indigenous entrepreneurial base upon which private sector development can take place, we will not have a true private sector involvement in the economies of Africa. Our primary thrust, as we begin to move into action programs, is going to be toward the indigenous aspects of the problem.

Senator KASSEBAUM. I think that is a very positive effort. I have one more question, and then I will yield. It is on this same subject. There has been a shortage, I believe, of foreign exchange in a number of the countries that are experiencing particular problems. So when we talk about foreign investment and private sector development from outside the country, do you see this as a problem when they are really unable to exchange the money that is needed to repatriate the profit?

Mr. LOVE. Yes, the foreign exchange difficulties that are being faced in all of these countries certainly cause major problems with respect to foreign direct investment. One is whether there is going to be a problem on repatriation of earnings out of the country which, of course, is of immediate concern. The second problem, which in some cases is more serious, is whether the firms that are already established and on the continent can get access to adequate foreign exchange to import raw materials and commodities necessary to continue production.

As foreign exchange becomes scarcer the restrictions on availability to the existing private sector are increased in absolute terms, or a delay sets forth in the system, and then you find companies being forced to cut back production, resulting in a drop-off of products. This problem has occurred recently in Kenya. That, of

course, begins to make the whole investment climate look less attractive to other U.S. firms, so it is a major problem.

Senator KASSEBAUM. Thank you.

Senator Boschwitz.

Senator BOSCHWITZ. Let me ask about more African countries on a kind of one by one basis. Some of them are food self-supporting, are they not?

Mr. LOVE. Yes, sir. Zimbabwe in particular is food self-supporting, and is a food exporter at the present time.

Senator BOSCHWITZ. Does Zimbabwe continue to be a major exporter?

Mr. LOVE. Yes. At independence, Zimbabwe was in a slight deficit situation. That was due mostly to the fact that the rural areas and the major commercial farms had all suffered during the war. One of the first policies initiated by Mugabe's government was to encourage increased food production by putting a very substantial price incentive on the production of maize. Within one growing season, Zimbabwe was able not only to come back and reach self-sufficiency, but produce a surplus of maize equal to, I think, 2 million tons of maize. This of course, is quite substantial. They have now begun to export their maize, some of it to Zambia, some through Zambia to the Western African area.

They had very good weather conditions that first year of independence. During the second year of independence, southern Africa was faced with a very severe drought. Production in Zimbabwe dropped off substantially, but still they were self-sufficient, and through carryover from their previous production year and some surplus in this last production year——

Senator BOSCHWITZ. Are you still talking about Rhodesia-Zimbabwe?

Mr. LOVE. That is right. They were in a surplus situation. Zimbabwe probably represents the brightest food production picture in Africa at the present time.

Senator BOSCHWITZ. What about its neighboring country, Malawi? It is self-sufficient also?

Mr. LOVE. Yes, Malawi has basically been self-sufficient through most of its years of independence. When the drought hit last year, Malawi did have a small deficit, but for the most part the Malawians have done one of the better jobs of producing food of the countries on the continent.

Senator BOSCHWITZ. What about some of the countries under the bulge, such as Liberia and some of the countries that have quite aggressive economies? Are they also food-independent?

Mr. LOVE. I do not believe any of the countries in West Africa is totally food-independent. Zambia, as you begin to move up, has——

Senator BOSCHWITZ. Cameroon?

Mr. LOVE. Cameroon is not self-sufficient either, although it is nearly so.

Senator BOSCHWITZ. Cameroon has more positive parts in its economy in general, so I would suppose it is not as big a problem, but the little countries, Nigeria, Togo, Liberia, Ghana, some of them have very aggressive economies. Are any of them food-independent? Not for everything, but I mean generally in the net?

Mr. LOVE. I do not have the figures on that, Senator. I would have to check it, but I would be happy to do that and submit it for the record.

[The information referred to follows:]

FOOD SELF-SUFFICIENT COUNTRIES IN AFRICA

[SUBMITTED BY AID]

The following countries, as noted on the table below, were food self-sufficient in grains in the period 1976–78, the most recent years for which information is available: Chad, Togo, Burundi, Kenya, Rwanda, Uganda and Malawi. As you are probably aware, Zimbabwe became more than self-sufficient in maize in 1981.

The second table shows general food production trends to 1981 in selected African countries, to give a better feeling of the current food situation.

TABLE 1.—FOOD SUPPLIES BY REGION AND COUNTRY, SUB-SAHARAN AFRICA

Country	Staple foods [1]		Average daily per capita calorie intake as percentage of daily requirement, 1976–78 [2]	Index of per capita food production, annual average, 1976–78 (1961–65 = 100) [3]	Percent of self-sufficiency, annual average 1976–78 [3]	Average annual—1,000 metric tons		
	Rural	Urban				Food aid, cereals, 1976–78 [4]	480 food aid, 1976–78 [5]	Cereals imports, 1976–78 [6]
Sahel:								
Cape Verde	Maize	Maize	77	NA	NA	34.8	11.9	NA
Chad	Millet, sorghum	Rice, wheat	76	87	100	32.3	13.7	14.2
Gambia	Rice	Rice	101	* 95	52	10.5	3.2	40.9
Mali	Millet, rice, sorghum	Rice, wheat	76	83	99	26.5	7.9	30.8
Mauritania	Millet, sorghum	Rice, wheat	81	72	* 32	41.3	11.7	122.0
Niger	Millet, sorghum	Rice, wheat	85	85	97	43.2	12.9	23.4
Senegal	Millet, rice	Rice, wheat	108	76	59	89.1	28.0	154.4
Upper Volta	Millet, sorghum	Rice, wheat	71	67	97	35.8	20.2	39.0
West Africa:								
Benia	Maize, millet	Rice, wheat	94	84	87	7.5	2.1	41.3
Cameroon	Maize, millet	Maize, millet	101	95	90	4.8	2.5	104.6
Ghana	Maize, cassava	Maize, cassava, wheat	84	77	84	63.8	15.0	211.9
Guinea	Rice, cassava	Rice	83	101	85	39.3	7.8	54.8
Guinea-Bissau	Cassava, rice	Cassava, rice	100	NA	NA	27.7	6.1	NA
Ivory Coast	Cassava, millet	Cassava, rice	116	130	75		4	243.3
Liberia	Rice	Rice, cassava	97	98	80	1.2	6	61.3
Nigeria	Rice, maize, sorghum	Rice, cassava	86	87	91	4	4	925.0
Sierra Leone	Rice	Rice, wheat	97	97	90	8.5	* 4.1	37.7
Togo	Cassava, millet, rice	Rice, wheat	95	98	100	12.0	8.1	NA
Central Africa:								
Angola	Cassava, maize	Cassava, wheat	69	59	NA	8.0	1.2	153.7
Central African Republic	Sorghum, maize, cassava	Wheat, rice	98	102	* 91	1.4	8	11.5
Congo	Cassava, rice, maize	Rice, wheat	95	93	* 40	3.2	2.4	60.8
Gabon	Cassava, plantains	Rice, wheat	NA	NA	NA	NA	08	27.6
Zaire	Cassava, maize, wheat	Cassava, maize, wheat	83	103	70	29.3	1.1	381.6
East Africa:								
Burundi	Cassava, plantains, sweet potatoes, pulses, maize.	Cassava, plantains, sweet potatoes, pulses, maize.	106	106	100	7.8	3.1	30.5
Ethiopia	Teff, maize, barley, sorghum, wheat	Teff, wheat	69	69	* 98	102.3	18.5	70.3

TABLE 1.—FOOD SUPPLIES BY REGION AND COUNTRY, SUB-SAHARAN AFRICA—Continued

Country	Staple foods [1]		Average daily per capita calorie intake as percentage of daily requirement, 1976–78 [2]	Index of per capita food production, annual average 1975–78 (1961–65 = 100) [3]	Percent of self-sufficiency, annual average 1976–78 [3]	Average annual—1,000 metric tons		
	Rural	Urban				Food aid, cereals, 1976–78 [4]	480 food aid, 1976–78 [5]	Cereals imports, 1976–78 [6]
Kenya	Maize	Wheat, maize	96	95	102	8.8	3.1	43.1
Rwanda	Plantains, pulses, sweet potatoes, maize, cassava.	Plantains, pulses, sweet potatoes, maize, cassava.	82	102	100	12.8	4.5	6.5
Somalia	Maize, sorghum	Maize	77	[8] 90	NA	[8] 1.2	12.2	73.9
Sudan	Sorghum, wheat	Sorghum, wheat	93	117	99	82.5	[10] 5.9	88.8
Tanzania	Cassava, maize, rice	Wheat, rice, maize	81	106	93	108.1	25.1	108.1
Uganda	Plantains, pulses, millet, maize, sweet potatoes, cassava.	Plantains, pulses, millet, maize, sweet potatoes.	80	75	100		.07	15.3
Southern Africa:								
Botswana	Maize, sorghum	Maize	73	111	[8] 71	5.9	5.5	[8] 39.5
Lesotho	Maize, wheat	Maize, wheat	95	100	[8] 78	19.1	13.0	63.3
Madagascar	Rice	Rice	107	103	87	9.3	1.3	174.6
Malawi	Maize	Maize	93	101	100	2.6	.6	40.2
Mozambique	Cassava, maize, rice	Cassava, wheat, rice, maize	73	82	89	101.8	8.2	192.0
Namibia	Mahangu	Maize	95	NA	NA		NA	NA
Swaziland	Maize	Maize	94	103	[8] 89	NA	.5	[8] 13.0
Zambia	Maize	Maize	95	141	NA	17.4	2.3	61.8
Zimbabwe	Maize	Maize	109	NA	NA			NA

[1] USDA, ESCS.

[2] USDA, ESCS, Global Food Assessment, 1979, table I–2. In this report, per capita food intake was calculated as the quantity of food available for human use at the retail level after provision was made for change in food stocks and the supplies of food traded, fed to livestock, used as seed or for individual purposes, or lost in collection, processing or marketing. Recommended caloric intakes are those established by the Food and Agriculture Organization and the World Health Organization in 1973.

[3] The standard food self-sufficiency ratio is caluclated as: SSR—per capita production of cereals/per capita consumption of cereals. Percent of food self-sufficiency—SSR x 100. The SSR for each country was calculated using data from USDA, Global Food Assessment, 1979, table II–9 and the FAO Production Yearbook, 1978.

[4] Unpublished internal report, FAO, World Food Program. CFA: 915 (Spring, 1980), pp. 19–20. Data for 1976, 1977 and 1978 were calculated by averaging data for split years.

[5] AID, Africa Bureau, Office of Development Resources. Food for Development in Subsaharan Africa, March, 1980. Statistics in this report were originally from Food for Peace Annual Reports, Africa CP 1980 and other Food for Peace documents.

[6] FAO, Trade Yearbook, 1978; IMF, International Financial Statistics; and World Bank, "Economic Data Sheets."

[7] Same source as footnote 2 but table II–3.

[8] 1976–77 average.

[9] Figure does not include $1.3 million of commodities for which the tonnage is unknown.

[10] Figure does not include $4.8 million of commodities for which the tonnage is unknown.

Source: USDA Food Problems and Prospects in Sub-Saharan Africa.

NA = Not available.

TABLE 2.—AFRICA—INDICES OF PER CAPITA FOOD PRODUCTION, BY COUNTRY, 1972–81

[1969–71=100]

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Angola	93	96	95	85	81	78	73	73	75	67
Benin	100	101	95	96	103	104	104	105	94	91
Burundi	99	99	81	94	92	92	91	90	89	92
Cameroon	99	100	103	105	100	100	101	97	98	100
Ethiopia	92	90	84	82	73	69	69	66	70	67
Ghana	84	92	93	78	77	72	70	71	68	69
Guinea	103	107	102	101	97	98	98	100	93	93
Ivory Coast	97	101	112	128	118	117	119	121	125	128
Kenya	105	100	97	99	104	108	105	99	97	100
Liberia	102	110	123	115	110	112	106	107	101	103
Madagascar	98	90	94	96	95	89	83	89	89	86
Malawi	111	103	104	91	96	97	100	95	92	110
Mali	79	82	105	106	104	90	100	91	71	78
Mozambique	100	97	92	79	69	73	75	73	72	73
Niger	92	61	83	69	95	96	101	106	108	98
Nigeria	97	91	93	93	91	89	89	88	85	82
Rwanda	94	96	91	105	108	105	102	108	108	108
Senegal	72	86	108	119	103	73	104	72	65	87
Sierra Leone	102	101	98	101	98	101	95	95	91	88
Republic of South Africa	112	89	113	103	101	106	107	101	103	113
Sudan	97	92	97	105	98	97	104	98	94	95
Tanzania	99	98	90	102	104	103	109	101	97	96
Togo	90	85	80	81	75	68	76	82	80	84
Uganda	95	89	86	86	84	82	85	80	77	76
Upper Volta	87	76	93	99	96	87	92	89	76	92
Zaire	90	95	90	90	97	96	90	87	86	85
Zambia	107	99	111	108	114	109	95	86	92	103
Zimbabwe	117	82	108	100	96	92	87	74	77	95
Africa, Sub-Sahara	98	92	97	96	93	92	92	89	88	89
Sub-Sahara less Republic of South Africa	97	93	94	94	92	90	90	87	85	86

Source: World Indices of Agricultural and Food Production, 1972–81, U.S. Department of Agriculture Statistical Bulletin 689, August 1982.

Senator BOSCHWITZ. Are you shaking your head, Ambassador Wisner?

Ambassador WISNER. Well, it is my impression that the Cameroon is very close, if not exactly food self sufficient, but as you go up the West African coast, it is also my impression that there is practically not a single nation that is not dependent on food imports to make up the difference between domestic consumption and local production.

Senator BOSCHWITZ. And despite their export of coffee, cocoa, or something else, they still have a net food deficit?

Ambassador WISNER. That is correct, and much of that deficit is in the form of rice.

Senator BOSCHWITZ. Ambassador Wisner, you spoke as though in walking across the African countries and trying to solve their food problems you were walking on eggshells, but Mr. Love, you made no mention of that. Do you feel that we are imposing upon our political relationship if we aggressively try to help them change their agricultural structures? Are they not amenable to that, or are they not receptive to that approach?

Mr. LOVE. I think probably without exception if you sit down with the African countries and discuss objectives in terms of increased production benefiting the rural population and eliminating

the deficit in the urban areas, they would agree. However, I think there are differences in perception with respect to what the major problems are. For instance, there is the issue of the parastatal, whether the problem is to increase the efficiency of the parastatals.

Senator BOSCHWITZ. Of the what?

Mr. LOVE. The parastatals. The term "parastatal" means a state corporation.

Many of the countries in Africa operate through the public sector rather than through the private sector, and these institutions, particularly in the marketing of food crops, have not been particularly successful. We feel that the government should get out of the marketing area and turn it over to the private sector. There is a difference of opinion between us and, I think, the other donors and some of the governments as to whether that should be done. That is an issue.

Senator BOSCHWITZ. Do you find as great a sensitivity as Ambassador Wisner would indicate?

Mr. LOVE. Well, the sensitivity that I think Ambassador Wisner was referring to is not simply related to the agricultural area, but gets into some of the serious problems that have been taking place in the macroeconomic scene. Major stabilization efforts are being faced by countries such as Sudan, which entail devaluation of their currencies and immediate repercussions, particularly for the urban populations.

These are considerably more serious at the present time than the range of the problems in agriculture with the possible exception of the pricing of commodities to the urban consumers themselves. Tanzania, Sudan, and Madagascar, as they go into IMF standby agreements, are faced with the need to devalue their currencies and in many cases to reduce subsidies. That is very difficult. When governments exhibit the courage to go ahead and take these corrective actions, they frequently result in political reactions amongst the populations.

Senator KASSEBAUM. If you would yield for a minute on that, I would agree. I think Sudan is a particularly troubling example where riots ensued. Are we assisting, because those were actions that were needed, and it took a certain amount of courage to do that? Are we lending support in some way when they are trying to get their own house in order, and in what way?

Mr. LOVE. There are a number of steps that are being taken. An international consultative group met on Sudan a year ago to face the multiple problems associated with reform, one of which was debt relief. AID was an active participant. As a result of that consultative group, the different donors pledged varying amounts of general program type assistance and commodity assistance in support of the IMF reform agreement. For the most part those pledges have been delivered, certainly by us but also by the other donors.

One of the problems that developed is that the statistical information on the actual debt structure of Sudan turned out to be grossly underestimated, so that the original reform plan that was put in effect is probably not adequate to meet the needs.

We are facing the need to go back to the drawing table and reexamine what is actually required to get Sudan out of the situation that it is in. A major aspect of it will almost surely have to be sub-

stantial debt relief. The United States, through its aid program to Sudan, which is the biggest one in sub-Saharan Africa, is working closely with the World Bank, IMF, and the Sudanese Government to address this problem.

Senator KASSEBAUM. I have one question. What are your priorities in Sudan, for instance, at AID regarding agriculture? Where have you placed your emphasis there?

Mr. LOVE. In the agriculture area, the bulk of our efforts have been placed in agricultural research, with an emphasis on the rain-fed crops. We think there is a fairly substantial potential for development in this area, and we have such programs in the north and also in the south. As you know, the country is somewhat separated in terms of its governmental apparatus and also its physical situation.

The decision to focus on rain-fed agriculture was made after looking fairly close at the substantial irrigated agriculture that Sudan has which is a base for producing the wheat and cotton that it does produce. We think the rain-fed area shows the greatest potential in the long run for increasing production.

We also recognize that this is a long-term investment, and that it will probably take 10 years or more to begin to get new varieties introduced into the rain-fed agriculture.

Senator KASSEBAUM. Thank you, and thank you for yielding.

Senator BOSCHWITZ. I address my questions to either of our witnesses. Could you tell me a little about the ownership of land in Africa? You have alluded in your testimony, Ambassador Wisner, to that. Is land primarily held individually or privately, or is it primarily held by the state?

After you answer that question in a general way, would you answer it with respect to some of the larger countries, please?

Ambassador WISNER. Senator, I will not pretend that I am an expert on land ownership patterns throughout the continent. They vary enormously. The traditional patterns of ownership are carried forward into the modern age. There are substantial tribally owned lands, substantial state-owned lands, with a variety of leasing arrangements in both cases, and temporary tenure occupancies, and there is some privately owned land. The situation changes enormously from country to country. It is hard to generalize for the whole continent.

Mr. LOVE. In terms of the overall continental profile, that is correct. The traditional communal patterns still exist in almost every country. These basically include commonly owned land with the right of some of the individual farmers to farm a specific piece of it and possibly graze their cattle on the common holdings. But changes are taking place. Kenya, for example, is an area where, since independence, there has been a substantial move toward individual land ownership, titled land going to the smallholders, although there are areas of Kenya that also have communal land tenure.

The continent is in transition at the present time, but is basically holding to the traditional pattern.

Senator BOSCHWITZ. Therefore, you are saying that most land in Africa is held communally and not privately?

Mr. LOVE. That is correct. And in some countries I think title per se is vested in the state, even though in practice the communal traditions do prevail.

Senator BOSCHWITZ. So there is very little private farming as we know it in this country? In Rhodesia there is certainly private farming, and in South Africa there is certainly private farming. There are no food problems in South Africa. They are quite a major exporter.

Mr. LOVE. South Africa is a major exporter of maize to the Southern Africa area. In Zimbabwe, 50 percent of the land was held by the white settler community and a small segment of black farmers, and the other 50 percent was held in traditional communal land holdings, in what is now in fact termed the communal areas.

When the new government in Zimbabwe increased the price incentive, the price for maize, at independence, we all expected the commercial farming sector, the large white farmers to respond. They certainly have the technology and the physicial infrastructure and the access to inputs. They had access to the markets also, and they did respond. What was interesting was, that there was also a fairly substantial response from the traditional black farmers in the communal areas, even though they were substantially prejudiced with respect to lack of transport, lack of fertilizer, and higher prices when it got in there, and had a more difficult marketing situation. They were still able to respond and produce some surplus, and a greater amount than was anticipated.

Senator BOSCHWITZ. Some people from my State are going to Nigeria and are taking what are very large areas, 20 square miles, and are setting up farms there. I am not quite sure who owns the land, or if they are just working it. Are those projects successful? Are they just in their early stages? Are they happening in other parts of the United States where the private sector of this country and of Europe may be going there to assist and invest in farm operations?

Ambassador WISNER. I do not know about the exact cases you mentioned in Nigeria. I think if you look at it historically, though, the involvement of Europeans in agriculture in Africa, large-scale agriculture, peaked and receded, and what you are observing today is, in a number of countries, very limited reentry on the part of external investors, private investors, and it has certainly not gained major speed nor become a basic trend in the investment patterns throughout most of the continent.

There are specific exceptions. There are real opportunities, but there are also daunting problems.

Senator BOSCHWITZ. How are these folks doing in northern Nigeria? Are you familiar with them?

Ambassador WISNER. I just do not know, Senator, but we can check for you and get you an answer.

Senator BOSCHWITZ. Fine.

[The information referred to follows:]

One firm actively seeking to invest in agricultural development in northern Nigeria is Max E. Swartz & Sons., Inc., of Sacred Heart, Minnesota. That company presently is consulting with Nigerian Government officials and potential Nigerian part-

ners about possible investments in Sokoto State. The firm is also an active bidder on at least one IBRD-financed agricultural project (boreholes) in northern Nigeria.

Senator BOSCHWITZ. Would you tell me about some of the farm programs that these African nations have? You spoke of the Rhodesians giving price incentives for higher production. You have spoken about the fact that there appear to be subsidies to keep the price of food low in the cities. Are there production incentives through price among the African nations?

Mr. LOVE. We are beginning to see the end of an approximately 20-year period of experimentation in State socialism in Africa since independence. An effort is now being made in certain countries to begin to place greater emphasis on price incentives. This has been the case most recently in Kenya, which increased the support price for maize, resulting in an increase in production. Even in Tanzania, where the agricultural situation is very bleak, there has been an effort to try to straighten out and improve the regional pricing structure.

I think a change is beginning to take place, but it is just beginning to take place. In the past, there was very little concern about incentives to the rural producer and their concern was the price to the urban consumers. I do not want to say that there is yet a major shift in policy because that has not taken place, but we think this is one of the areas of policy reform to which we need to give greater and sustained attention.

Senator BOSCHWITZ. When we discuss the Public Law 480 program in the Agriculture Committee, and I note that this committee also in its briefing paper has put the impact of the Public Law 480 program as sometimes having the effect upon the recipient country of discouraging agricultural production. Would each of you comment on that, please?

It is more your department, Mr. Love, I believe.

Mr. LOVE. The concern, I would say, on importations of Public Law 480 commodities as a disincentive is a valid one. We try to be very careful on programing Public Law 480 to insure that the needs that we are meeting are in fact deficits that are either short term in nature because of crop situations, or that the programs themselves are tied to some of the basic agriculture reforms that are necessary. Part of the problem is the one I mentioned earlier, which is the disincentive caused by changing consumer patterns, but basically we try not to put excessive amounts of Public Law 480 into a country to the detriment of the rural producer.

Ambassador WISNER. Senator, I would like to take a slightly more positive note, recognizing, of course, the validity and supporting what Mr. Love just said about the basic planning direction. I think Public Law 480 can play an extremely creative role if it is used correctly, and we are using it correctly. Let me speak from direct personal experience, having just come back to the United States from a country that was a recipient of Public Law 480, and that is Zambia.

The use of a Public Law 480 program gives us enormous potential for stimulating agricultural production. It gives us political impact, and it gives us a capacity to show a genuine responsiveness to an immediate problem a government has. How have we used it creatively? There are a number of ways. It has opened the door,

the Public Law 480 program, the negotiations surrounding that program, to enter into an immediate dialog on an issue of great sensitivity with the highest levels of the state, the President of the Republic, the key ministers, in which you can then entertain and discuss in depth the measures that need to be taken to stimulate agricultural production more broadly. You can begin to talk about very sensitive and delicate issues, like pricing policy and how incentives will be operated.

Senator BOSCHWITZ. Why would price policies be sensitive?

Ambassador WISNER. Well, I can give you an example. On the 4th of August, Senator, the Zambian Government announced a 30-percent increase in the price of the staple food after 2 years of continuing price increases. Can you imagine in your own home community if basic food staples increased 30-percent overnight what the political effect of that would be? Food prices are politics.

Senator BOSCHWITZ. Do they use a deficiency payment type approach where the farmer receives a payment that does not necessarily impact the retail price?

Ambassador WISNER. The system is based in that country and in many African countries on a state marketing system. The state offers hopefully an incentive price to the farmer, and the farmer tries to meet that, and then retails it to the consumer through a state marketing and milling system. So the set government price becomes politically extremely volatile and an important decision.

Senator BOSCHWITZ. The price you pay the farmer does not necessarily have to reflect the price you charge in some of these state operated economies. Of course, it requires a tax base.

Ambassador WISNER. Where those systems exist, it is our hope and it is the intention of the donor community in general to try to bring into parity the domestic production costs and incentive costs to the farmers and the consumer price so that you are not running enormous state deficits in feeding your population.

Senator BOSCHWITZ. They do not use the target price concept then?

Ambassador WISNER. No. In this particular case, no. There are many models, Senator, as there are many, many countries.

Senator KASSEBAUM. I am not sure we would want to wish our system off on someone else either.

[General laughter.]

Senator BOSCHWITZ. On the other hand, if they are short of food—for example, take the European Community. They have raised their prices to a very high level, and have raised their production very expansively. Quite clearly, as you indicate, whether it be in Zimbabwe or wherever, if you raise the price, then people produce more, and the question becomes then whether or not the market can bear it.

Ambassador WISNER. Or the deficit. The budget problem.

Senator BOSCHWITZ. I understand, but on the other hand, if you balance that out with the necessity of using hard currencies to import—well, I am not familiar enough with that.

Senator KASSEBAUM. Let me ask one question about Public Law 480. Would you envision cutting off Public Law 480 food supplies to those governments that have not encouraged local production?

Mr. LOVE. In Tanzania today, the discussions on the recent Public Law 480 agreement include a fairly lengthy list of policy issues related to agriculture. They were not made a condition per se of this year's agreement, but were made a subject for policy dialog during the next 12 months, with the firm understanding that if that dialog does not proceed satisfactorily, we will consider not providing Public Law 480 assistance next year. So, the answer is yes.

Senator BOSCHWITZ. May I ask a final question, Madame Chairman?

Prior to their independence, were most of these countries food self-sufficient? Were they not?

Mr. LOVE. I really do not know the answer to that, Senator. I believe most of them were. The agricultural sector in most of these countries at independence was an export agricultural center on which the colonial powers focused. That is, coffee, cocoa, and tea. And there was still a lot of communal farming. I am sure that the agriculture of that period was basically able to meet the needs of the population.

Ambassador WISNER. But since independence, two major changes have taken place. First, populations across the continent have nearly doubled. Second, the move from rural to urban area has meant a declining base in the countryside and a growing market demand in the city areas. It has changed the picture in Africa entirely in the roughly 20 years of independent Africa's experience.

Senator BOSCHWITZ. I have one final question. You spoke, Ambassador Wisner, about there being no quick solution. You summarized your statement with four conclusions. Mr. Love really did not—if you were to be as brief and as pointed as possible, what should the Africans do and what can we do to bring them to greater food self-sufficiency?

Mr. LOVE. The thrust of my written statement, which I did not cover orally in detail this morning, really laid out two main themes. The first theme is the long-term investment that is necessary in developing human capital, so to speak, and the supporting investments and research capability and development infrastructure so that both the rural population and the producers have access to the markets and to the technology. It is basically the type of investment in technology and manpower that was done throughout Asia and Latin America for many years but has been neglected in Africa.

The other half of the equation is the policy dialog itself, working with the governments to get them to make the basic policy reforms that are necessary to insure that this investment in the technology and the manpower will in fact result in increased production of food through adequate price incentives and adequate use of the private sector. This would enable these countries to actually achieve their necessary growth.

In our prepared statement, we tried to stress both the policy end of the operation, where we think there are major problems, and the very long-term investment that is required in developing the technology, the manpower capability, and the physical investments that are necessary.

Senator BOSCHWITZ. You make it sound like we are a long way from achieving those goals.

Mr. LOVE. A very long way away.

Senator BOSCHWITZ. Do you have anything to add to that, Ambassador Wisner?

Ambassador WISNER. No. I would support that fully, sir.

Senator BOSCHWITZ. Every once in a while people come through my office, Minnesotans who have been in Africa, and have helped their agricultural economy in one way or another. Have those kinds of programs been successful, and have they been large enough to have any impact?

Mr. LOVE. I am not familiar with those programs, Senator. If you are talking about the technical exchanges, the university assistance, the answer is yes. We look to the U.S. universities as one of the primary sources of technology and technical transfer to these countries. They certainly were a key to the development of institutional capability in Asia.

Senator BOSCHWITZ. Thank you very much.

Thank you, Madame Chairman.

Senator KASSEBAUM. Thank you.

I have just a few more questions. First, touching on the land, and having been involved a bit in discussions on the success of the land reform program in El Salvador, seems to me that in spite of any differences, nonetheless there are similar issues of policy in Africa: The size of land holding that is most productive, and the ownership of that land, and what does have the greater productivity.

The OAU has endorsed the Lagos plan of action of smallholder land and wishes that this be emphasized. It seems to me to be important, but it really is an enormous structural change from the way that is operating presently.

What importance do you attach to that, and should we be of any assistance in encouraging the change to a smallholder of land or land operation?

Mr. LOVE. In most of the continent you already have a smallholder operation. Zimbabwe is a different situation. There are large holdings in Zimbabwe.

Senator KASSEBAUM. But again, is it pretty much government controlled?

Mr. LOVE. In Zimbabwe?

Senator KASSEBAUM. No, not Zimbabwe, but in many of the other African nations.

Mr. LOVE. If you look at the actual farmers in Africa, you will find that they are smallholders, that there is not the same kind of tenure situation as in parts of Asia and Latin America. I am not saying that there may not be some problems in the tenure area itself. It is one that we need to look at more closely, but I do not think you have the problem of large absentee landlords on the African continent.

Senator KASSEBAUM. I realize there are not the absentee owners, but it is interesting to think about how we provide our assistance through technology and training and expertise, because our own agricultural programs are so sophisticated in technology now. How do we relate to the smallholder concept, and the costs of our own

operation vis-a-vis the indigenous training that you were speaking of, which is surely in very small proportion to our own concept?

Mr. LOVE. The traditional profile of an African farm is a woman with a hoe and a baby on her back, and basically planting the traditional crop varieties. I do not think we are visualizing moving toward, a more mechanized approach in agriculture that is synonymous with what we do in the United States. We do feel that U.S. technology can be of major assistance in agricultural research and in terms of working on new crop introduction. It can be of great help in working on the agricultural extension operations. It can be of considerable help in assisting the government to focus on issues such as pricing policy, storage, particularly farm storage, which is a critical issue, and many other aspects. We do not necessarily have to try to transfer to Africa the kind of mechanized technology that takes place in this country.

Senator KASSEBAUM. Sometimes those projects must appear to be glamorous and appear to be something that is believed to be needed when perhaps it really is not.

Mr. LOVE. I am sure there have been hundreds of examples of the government wanting to start a large project, either private or public, but except in some of the countries that have experimented with state farms, the biggest problem has been simple neglect of the smallholder. It is not so much a question of arguing over the options as following policies that simply have left him to farm in his traditional manner.

As time has passed, and as population growth has taken place, as Ambassador Wisner mentioned, many of these countries are running out of land and are beginning to face the problems that other developing areas have faced, which is, can we increase productivity by using technology? Can we introduce new crops? Can we introduce new fertilizer? Can we introduce pesticides? Does this make sense in Africa in the same way that it made sense in East Asia and South Asia, where you have monocrop cultures for the most part.

Until you begin to get into those areas, I think the government is essentially ignoring many of these small holders.

Senator KASSEBAUM. I just have one last question. Where do you believe we should be putting emphasis in our AID programs? Is there any way in which you believe they should be changed structurally, perhaps be funded in a different way? I know that concern has been expressed about uncertainties created by our year-to-year appropriations process causing difficulty in planning very far ahead.

Also, would you comment on specific changes in the law that you feel would be beneficial? Going beyond that is the larger question of infrastructure needs, such as transportation and storage which you mentioned. Can AID become involved in those areas? Is it limited, to basic human needs? Is that a guideline for AID? How do you interpret it?

Mr. LOVE. Well, you have asked a number of questions. On the question of funding, obviously, it would be easier to plan if we had multiyear funding. However, I do not think we feel that is a real possibility. We plan our projects on a multiyear basis, and we have recently been attempting to push the Agency to accept the fact

that many of these investments are long term in nature. Certainly that is the case in something like agricultural research. It is foolish to think that you can develop an agricultural research project and at the end of 5 years, bang, you will have reached a demonstrable achievement of major goals. It is a long-term proposition.

I think we are now beginning to recognize that fact more up front in our programing and planning process, we now recognize that many such projects are the first phase, and we understand that they will have to be followed, if successful, by succeeding phases. So, the timeframe is one aspect of the problem. I think it is absolutely essential in the context of Africa that we recognize that we are looking at a very long timeframe in order to begin to really solve these problems.

The second aspect gets to the question of "basic human needs," and what are basic human needs? As I tried to say in my oral statements here, we feel that basically if we can make the investments in the long-term areas that we have outlined, and engage the government in the policy reform that is necessary, in the last analysis, this will assist the rural populations, and the small farmers who are the bulk of the poor population in Africa at this time, to achieve self-sustained growth within their own families, and increased incomes.

The problem when you start talking about basic human needs goes back to, I think, what the agency itself went through during the decade of the seventies. What is a basic human need? At that time, I worked in Asia. When we wanted to do a rural road program, we found ourselves in hot water within AID and certainly with committees on the Hill, as to whether this did in fact meet a basic human need. Could we demonstrate how many small people were being benefited from this?

This occurred in a number of areas. It occurred when we attempted to start programs in Indonesia relative to increasing their manpower capability, necessary to run their agricultural ministries, and most importantly, to focus on research, where they had very few skilled people. We ended up running a very successful program in adopting the rice technology from the Philippines to Indonesia.

But in many cases where we addressed what we thought were basic investments, the issue of "does this immediately impact on the poor" came up, and I think it did cause us problems in the program. It did shift us away from priorities that we certainly felt in Asia at the time were necessary.

In the time that I have spent in Africa during the last 3½ years, this issue seems even more critical. The investments that were already made in other parts of the world over 20, 30, or 40 years in basic institutions, manpower development and infrastructure, were not made on the continent of Africa. An inability to operate in these areas, I think, would be disastrous in the long run, in terms of supporting growth in the African economy. I am concerned about this.

I think we are currently on the right track. We have worked pretty hard in the last couple of years in attempting to refocus our own program, to get more projects on the books that do address some of the critical building blocks of agriculture. We are now be-

ginning, and it is just a beginning, on the policy end of the problem and on the private sector end of the problem.

I think it is more important that the committees look at what we are doing, look at the substance of what we are doing, and hopefully do not put us back into the kind of bind that evolved during the seventies. I think restrictive interpretation of basic human needs ended up providing a major constraint to our operation. In the end it provided a disservice to the whole development scene, and the developed world's poor.

Senator KASSEBAUM. Thank you very much, Mr. Love and Ambassador Wisner. I think your testimony has been very beneficial. I certainly feel it has been to me, in helping to understand this issue. I think it is an enormously challenging and important one. I appreciate very much your taking the time to share your information with us.

Mr. LOVE. Thank you, Senator.

Ambassador WISNER. Thank you, Madame Chairman.

Senator KASSEBAUM. Let us begin now with our second panel, and we appreciate very much your joining us this morning, Dr. Berg, Dr. Loevinsohn, and Dr. Stryker. Why don't we proceed alphabetically? Let us begin with you, Dr. Berg.

Senator BOSCHWITZ. Would you wait for just a moment, please?

Senator KASSEBAUM. Senator Boschwitz has to leave. He says he has read your testimony, Dr. Berg, and will read your testimony, Dr. Stryker, and I do not know that we have yours, Dr. Loevinsohn.

Mr. LOEVINSOHN. That will be over shortly, Senator Boschwitz.

Senator BOSCHWITZ. Do you have written testimony, Dr. Loevinsohn?

Mr. LOEVINSOHN. Well, partly. I can start, if you would prefer.

Senator BOSCHWITZ. Oh, I see. You do have a written statement, Madame Chairman. I read your statement, Dr. Berg, almost to the end. I will look for the ending that you mentioned. I thought it was very good, and I will read your statement, Dr. Stryker, as well as yours, Dr. Loevinsohn. Since we have them all in writing, Madame Chairman, I have no preference.

Senator KASSEBAUM. Very well, then. Let's stick with the alphabetical order. Dr. Berg.

STATEMENT OF ELLIOT BERG, BERG ASSOCIATES, ALEXANDRIA, VA.

Mr. BERG. Thank you, Madame Chairman.

Africa, as the meeting today suggests, is now the world's problem area in terms of food production. Once everybody worried about Asia, and especially the Indian subcontinent, but things there have gotten better in the seventies, and the road ahead now looks pretty clear.

It is important in thinking about the African food problem, and in line with what several people said in earlier testimony, to recognize that Africa's food production difficulties really are not very old. They are a product of the seventies. Not only were most African countries self-sufficient in food in the colonial period, but they did not do all that badly in the 1960's either, in terms of output.

It is really only in the seventies that the problem has emerged. The question then is, Why is this? How has this happened? Unless we have a pretty good fix on the causes of these food production problems, neither we nor our African partners will make much progress in dealing with them.

It seems to me convenient to break down these sources of production problems into two groups. One is structural, physical, or historical factors which are not easily amenable to short-term policy change. I think there are mainly four such factors, which I will only pass over quickly. One of them has to do with technology. Research, in effect, has failed this continent. There are very few valid packages, valid techniques and technologies that can apply to the bulk of the farmers of the region. We have in the past 20 years developed very little useful technology for people who work in rainfed agriculture and grow millet, sorghums, and upland rice.

The second structural problem has been war and civil strife. The post-colonial period has required a necessary effort of consolidation, social and political. It has brought disturbances in a number of countries of the region, and these have had their impacts on production.

There is also the fact of administrative weakness, partly because of the newness of these states, the recency of their emergence, partly because of failures during the colonial period and since. The administrative structures are exceedingly thin and weak in virtually all of the continent, and they are especially so in rural areas, for reasons that should be obvious. It is harder to work in those areas. Distances are vast. People are thinly spread, and communications are bad. All of the kind of underlying factors making for a smoothly running administrative system are lacking, while the demands of the environment are particularly demanding.

Then, finally, there is the question of weather. The 1970's probably was by historical standards a poor decade in terms of rainfall, at least in the savannah regions of the northern half of the continent, and this bad weather certainly played some role in the slow rise of food production.

These structural factors are undoubtedly important. But they seem to me to be far outweighted by domestic policy deficiencies. You have already heard quite a lot about these this morning.

I think five of these deficiencies are worth mentioning, and since I am supposed to talk no more than 10 minutes, I will really do almost no more than mention them.

Senator KASSEBAUM. That is all right. Please go ahead.

Mr. BERG. The first one has to do with price policy and marketing. This is the policy problem that receives the most play generally in the academic literature, in the press, and as we heard just a little while ago, also in discussions like these. Every government makes a choice in balancing its objectives between serving the needs and the interests of its consumer of basic foods and its producers of those foods. Poor countries have a particularly difficult choice, because unlike the EEC countries or the United States they have very little room in their budgets for financing subsidies which can allow both groups to be satisfied.

So, in the tradeoff between producer and consumer interests, by and large African governments have chosen to protect consumer

interests. They have done this in various ways. The one that most outsiders focus on is price policy; fixing prices below-market to producers of basic staples.

In fact, this is probably the least significant of the ways in which governments impose a low price policy on producers, mainly because most governments in the region are too weak to enforce these price policies on hundreds of thousands of farmers, and the result is that parallel markets develop everywhere, and farmers sell only a small share of their grain output in "official" markets at "official" prices.

In most of Africa, farmers typically sell on black markets at prices two or three times higher than official prices. So, the official price policies are not all that relevant, although they are not without some effect.

The way prices influence the situation most dramatically is through overvalued exchange rates and resulting low import prices. In the 1970's local prices in most African countries rose faster than prices in the countries with which African countries trade; African prices got out of line. In some cases exchange rate adjustments occurred, but in most cases they did not. The result was that imported foodstuffs became relatively cheap in much of this continent. In fact, all imports became cheap. But governments gave priority to imports of food. Where over valued exchange rates are linked to oil exports, especially severe problems arose. In Nigeria for example, imports of wheat and rice have soared during the last 7 years. The Nigerian Government has let in large quantities of low cost grains whenever high domestic grain prices threatened local real incomes.

So, the food price policy problem becomes a lot more complicated than simply a producer price policy. It really is an exchange rate problem in most countries, and that means it is not a simple matter of manipulating a little bit of policy change on the margin, so to speak. It really means that African leaders and we with them, must confront fundamental policy decisions in these economies that is, exchange rate adjustments. So, price policy has certainly been an important factor, mainly through the exchange rate door.

Marketing has been an independent factor constraining production, and one whose importance is grossly underestimated. Marketing uncertainties, the creation of public monopolies which are ineffective, which allow private traders to operate, but always in the shadow of legality, these situations create the worst of both worlds. In many African countries, there exists a private trading sector which, though it in fact handles most of the trade in food grains, is often illegal on the books, and is harassed or restricted in various ways by local officials. Often, for example, traders cannot legally transfer grain across provincial boundaries, or buy grain in bulk at prices higher than the government "official" producer price.

These factors, the marketing destabilization due to government policies, raises trading risks, creates obstructions to the movement of goods and disincentives to increased production. Marketing along with price policies, would have to be put high on anybody's list of policy factors explaining slow agricultural production in this part of the world.

The second factor has to do with the investment pattern that emerged in the sixties and seventies and toward which there are still pronounced tendencies: an overemphasis on large-scale schemes.

It's worth noting first that the 1970's were a period when more money flowed into African agriculture than ever went in before historically. Something on the order of $5 billion was spent on agriculture between 1973 and 1980. Most of that went for food production or for crops which are both consumed locally and exported, but mainly domestically consumed foodstuffs. So, despite an increased inflow of resources, we have this poor production record, and this needs explaining.

Part of the reason is that these investment resources were badly used, much went to set up large scale schemes, state farms, irrigation developments and similar technology-intensive and capital-intensive activities. For various reasons these yielded little increase in output.

Another misuse of investment resources, if I may use such a harsh term, is rather more contentious, and may be especially contentious in this committee. Some part of the responsibility for poor production performance in the seventies was an overemphasis on the development of marginal or peripheral regions within countries.

Relative poverty in Africa is essentially due to geographic factors. The poorest people within each country are those who live in poor regions. Poor regions of most countries are places where there is not much rainfall, or where it is very irregular. These semi-arid and arid zones also happen to be where we know least about, in terms of the environment how to proceed to raise output. In the early seventies, representatives of the donor community and many Africans became concerned about the lack of trickle-down effects in what was generally viewed as a growth-focused strategy. Dissatisfaction with existing strategies led many governments to focus on the disinherited in particular, and governments were inclined in the same direction since they were concerned with regional equity and balance in the name of social cohesion and political integration.

The result was that of the increase in investment resources that went into agriculture in the 1970's, a significant amount went into the disinherited regions, the marginal regions. The results in terms of production, whatever the results in social or political terms, were far from satisfactory, and continue to be far from satisfactory. So, that is another factor that I think one has to put on the list of policy reasons for poor production performance.

The fourth factor has already been mentioned by other panelists; I will sketch it only in passing. This is the characteristically excessive reliance on parastatal enterprises in many African countries. The organizational work forces of rural development are public sector enterprises, organizations—public enterprises, state-owned parastatals—which were to be the main agencies of agricultural expansion.

These were to be agencies which would do extension work, which would do research, which would supply all of the farmer's inputs. All of the contracts between the farmer and the modern economy

were transmitted through these parastatal organizations and still are, by and large. But, for reasons that are well known and have been mentioned earlier, these work extremely inefficiently and have proved to be incapable of delivering the goods.

Mr. Love mentioned that we are at the end of a 20-year period of experimentation with socialist approaches, and I think that's right. Many governments have now recognized that, given the fundamental deficiencies of the administrative structure and the manpower shortages in these countries, the burden of delivering agricultural inputs, buying agricultural outputs and extending technology cannot be put on organizations which are so flawed. But in the seventies they were the instruments of choice.

Finally, in terms of policy deficiencies, I would list the excessive use of extension as a vehicle of change, and a corresponding neglect of research, an attempt to extend technologies which were too thin and too poorly developed and too academic or abstract. In order for agricultural extension to be reasonably successful, you have to have something to extend, obviously, a message. Whether or not there is a real message in much of this region is a matter of some dispute. People who are still involved in developing further extension projects say we do have sufficient technology to extend, but there is some doubt about that. In any event, you need a tested, profitable package.

The second thing needed is a congenial policy environment. It makes no sense to tell farmers to grow millet when they can make four times as much with the same land and labor by growing watermellons on which the government is not imposing a price policy. Nor can we expect farmers to respond if they can market their millet, suitably, or buy consumer goods with the money they earn. So, the surrounding policy environment has to be congenial.

Finally, you have to have an organizational vehicle which works. You have to have an extension operation in which you have people who are reasonably well trained, who get paid every month, who have vehicles that are not broken down 95 percent of the time, who, when they have vehicles that work, can get gasoline for them. I would say those conditions exist in perhaps 2 out of 10 cases in the region.

So, the absence, as it were, of this triad of preconditions has meant that the extension effort on which the fundamental project structure of foreign aid was built over the seventies, the extension effort, had small yields.

Now, that is the diagnosis. What do we do about it? Much of what is necessary has already been mentioned: First of all, a clearing away of the obstructions to the better use of individual energies and the energies of small holder farmers. For 20 years and more in most of the continent, very little has been done to help them, and much has been done to prevent them from becoming productive members of the agricultural economy.

So, the first order of business is to reduce the obstructions to the expansion of agricultural activity. Then there are the continuing needs that have been mentioned, for roads and research. We have to help African governments in major research efforts, the need for which is widely recognized. We must help also to keep roads open, and improve information systems, and do these simple things

which will improve the functioning of rural markets. Much of this will hopefully be done over the next decade in these policy dialogs about which there is now so much talk.

Let me say in conclusion, Madame Chairman, that the effectiveness of sweeping away the obstruction was dramatically evident to me in Somalia where I recently went to do a study for AID on the enlargement of the private sector in that country. I had the good fortune to stumble on a new area opened for development not far from the capital city, where in 2 years—no, 3 years, since 1979—there has appeared a group of energetic and progressive farmers, who are transforming agriculture in that region. People who 4 years ago were sitting in offices as junior civil servants are now farming in "companies" or individually in new and highly productive ways. They and others—many of them "traditional" farmers just a few years ago, are looking for tractors, growing corn and oilseeds on relatively large acreage, and earning incomes that are six or seven times higher than the average in the region. This is spreading very fast, and involves all kinds of farmers, including traditional farmers. It has happened especially fast in the last year and a half, when government began to remove its restrictions on the marketing of food grains and began to give a little bit of encouragement to the growing of crops to be marketed in this region.

The results will soon show up in the production figures, and I believe that is not unusual, that there are the same possibilities in a great many parts of this region.

[Mr. Berg's prepared statement follows:]

PREPARED STATEMENT OF ELLIOT BERG

Honorable Chairman and members of the subcommittee, thank you for the invitation to testify before you concerning Food Production in Africa: The International Challenge.

Africa is now the world's major problem area in terms of food production. The Indian sub-continent remains a preoccupation, but its performance in the past decade has been good, and the road ahead seems reasonably clear. The food production picture in Africa, on the other hand, has substantially worsened in the 1970's. The facts are well known, and other testimony will undoubtedly provide the numbers in detail. I'll mention here only a few of the main dimensions of the problem.

1. Food production per person fell in the 1970's in most of the continent. The data are very bad for food production, since most output is consumed on the farm. However the best estimates indicate that the average rate of increase of food production was about 1.5 percent a year in the past decade. Population meanwhile grew by 2.7 percent a year. Therefore food output per person in the continent as a whole was probably some 10 percent lower in 1980 than in 1970.

2. The decline in per person food output is quite general, only in 9 of the 39 countries for which data are available was food production up by more than population in the 1970's.[1]

3. The continent has become increasingly dependent on food imports in the past 20 years. Commercial foodgrain imports have increased at a rate of about 9 percent a year since 1960—more than three times as fast as population, and food aid inflows have also grown very substantially.

4. Rice and wheat imports have risen especially fast in the past decade—11-12 percent a year on the average. This has created delicate problems of food dependency and economic policy, since in most of Africa these grains can only be grown at costs far exceeding present (or projected) import parities.

How can the poor food production record be explained? As might be expected, the reasons are many, and the weight of each varies from country to country. But the central themes are pretty clear.

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[1] Burundi, Malawi, Rwanda, Kenya, Liberia, Zambia, Cameroon, Ivory Coast. (World Bank, Accelerated Development in Sub-Saharan Africa, 1981, Table 25.

First, it's evident that two sets of factors are involved. One consists of fundamental elements in the environment, not much amenable to short-term change. These can be called "structural." The other set consists of elements more directly related to policy.

Four structural factors are most relevant. First, war and civil strife have troubled some African countries in the past decade or two—a period of post-colonial consolidation. This has had short and/or long-term effects in slowing agricultural change and growth—for example, in Angola, Mozambique, Zimbabwe, Zaire, Ethiopia, Somalia. Second, the knowledge base in agriculture is thin. Usable technology—tested, productive "packages"—are few, especially for the main cropping systems in rainfed agriculture, involving millets, sorghums and upland rice. Third, the institutional/administrative base is weak; trained people are few, distances vast, communications poor, administrative traditions and procedures embryonic. So public institutions in rural areas operate at generally low levels of effectiveness. Finally, the weather of the 1970's was unusually unfavorable in the Sahel-Soudanian belt of the northern half of Africa, and this affected output over the decade.

These underlying sources of slow agricultural progress were aggravated by poor agricultural policies and misguided investment strategies. But before turning to these, it's important to say something about the popular view, expressed vigorously in the polemical literature on world food problems, that the main culprit in Africa's progress is overconcentration on export crops. It is true that research efforts until recently favored export crops. It's also true that there may be a few cases of regions where farmers have cut back on food production as they expanded exports. But in general, the argument that concentration on export crops explains Africa's poor food production record has very little relevance because:

(a) African export crop production has done even worse in the 1970's than food production. Agricultural export volumes fell by about 2 percent a year during the decade. Those countries with the worst food production performance tend to have the worst export crop performance too; in fact in some cases, exports have been deliberately downgraded by governments—e.g. Tanzania.

(b) In the 1970's, more external assistance went to food production than ever before; between 1973 and 1980, about $5 billion in aid money flowed to African agriculture. Most of this was for food crops, not for export crops. Of the total output expected from the aided projects, export production accounted for only 10–15 percent, or at most one-third if crops like maize and groundnuts (which are eaten locally and exported) are included.

(c) The idea that there is a necessary trade-off between export crops and food crops is wrong. Even in the short-run, experience indicates that most African farmers have adopted export crop production without significantly diminishing their subsistence food crop production, until they have had an assured local supply—which is of course what one would expect.[2] In the longer-run, the higher income associated with export crop production brings a more dynamic agricultural system in general. Countries that do well in expanding their export crop production tend also to do well in expanding food output . . . "the benefits of a changing, dynamic agriculture are not restricted to a single crop or set of crops. When change accelerate, the productivity of the whole farming system also increases." [3] Thus, agricultural change, whatever its origin, will lead to the spread of productivity—augmenting equipment, new or better roads and cheaper transport, new and cheaper consumer goods, etc. This is what common observation and available data tend to show. For example, the FAO's statistics on food and nonfood production (for some 40 African countries) indicate a positive, though weak correlation between food and nonfood output changes.[4] Also, in projects which involve lead commercial crops (cotton or coffee for example), food output also often rises because of residual effects of fertilizers on yields.

It's not neglect of food crops, then, or discrimination in favor of exports, that are implicated in Africa's lagging food production. It's rather a whole array of other policies and strategies that have proved to be wrong for Africa now. The terrain here is too vast for full discussion. I'll summarize five main policy deficiencies: inadequate price incentives and counterproductive marketing interventions by governments; overinvestment in large-scale schemes; overinvestment in marginal regions; excessive reliance on state agencies (parastatals) to execute development programs; excessive emphasis on agricultural extension.

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[2] Cf. John H. Cleave, African Farmers; Labor Use in the Development of Smallholder Agriculture, (New York, Praeger), pp. 27–30 and Appendix B.

[3] World Bank, op., cit., p. 63.

[4] They certainly do not indicate a negative correlation, which is what we should expect if priority to exports really was an explanatory factor in food production trends.

1. *Price and Marketing Policies.*—Except in a few countries, Africa's food production is in the hands of small peasant farmers. These small-holders cannot be induced to increase production for sale except by positive incentives: prices must be attractive, marketing arrangements reasonably stable and predictable, consumer goods must be available to encourage increased effort and risk.

In fact, these preconditions, a congenial set of incentives, have rarely existed in most of the continent in the past decade or two.

First of all, virtually all African governments have "official" producer prices—prices at which state agencies, often legal marketing monopolies, purchase (sometimes requisition) crops from farmers. In setting producer prices, governments have to balance the needs of consumers against those of producers. In general, they have favored consumer, especially urban consumer, interests and kept official prices low. In most cases this policy is only partially effective. Black markets develop, and prices there are often two or three times higher than the official prices. But the government imposition of low producer prices does have some impact, and to that extent it discourages production.

More important than direct price policy, however, is exchange rate and import price policy. Some governments have at various times subsidized imported foods—charging consumers less than landed prices. Even more pervasive has been the effect of overvalued exchange rates. Imported wheat and rice have become steadily cheaper than domestic staples, stimulating wheat and rice consumption and discouraging producers of substitutable local foodgrains. Food aid, which has been at a high level through most of the 1970's, has worked in the same direction. Relative price changes favorable to domestic staples have been checked, and urban preferences for wheat and rice reinforced.

Finally, the general marketing environment is not conducive to expanded production for sale in much of rural Africa. Government marketing monoplies and prohibitions on sales in alternative marketing channels do not prevent the emergence of parallel markets and private traders. But uncertain position of private trade creates disincentives and higher risks. Representatives for the state trading organizations sometimes take advantage of their monopoly position to cheat or otherwise exploit producers. Restrictions on movements of grain across regional boundaries cause prices to be lower in productive zones and higher in deficit areas. It also creates opportunities for illegal exactions, and exacerbates rural malaise. These intangible elements of the marketing environment may be more important than too-low official prices in explaining sluggish production and low growth of marketed food supply.

2. *Overinvestment in Large-scale Schemes.*—For varying reasons, and at different times during the 1960's and 1970's, many African governments directed a high proportion of their agricultural expenditure to large-scale schemes and estates that were usually run by parastatal agencies, and frequently involved a large degree of mechanization (as in the case of rainfed crops) or very heavy capital outlays (as with irrigation schemes), or both.[5] Some of these schemes were based on the conviction that only a rapid transition to highly mechanized, high productivity agriculture, as practiced in the industrialized world, would be able to overcome the stagnation of traditional low input/low output production. Shortage of rural labor was another contributing motive in some places. Still another impetus was given by the drought of the early 1970's, which convinced some governments in the semiaried countries that a substantially larger share of total food requirements had to be produced under drought-proof conditions. This resulted in a number of new irrigation schemes (in Senegal, Mauritania, Mali, Chad, and particularly Northern Nigeria). Ideological factors entered in a few places; smallholder-based strategies would encourage "kulaks" and lead to greater rural inequalities. Finally, failure to generate a sufficient surplus of cereals through official marketing channels motivated some governments to put more emphasis on state farms (Ethiopia, Somalia, Tanzania, and Congo); state farm productivity might be lower but the share of marketable surplus would be much higher than in traditional family farms faced with low official producer prices.

Most of these ventures have not fulfilled expectations. Their contribution to agricultural growth has been small in relation to their cost. Managerial problems, the overemployment of staff, a low rate of utilization of machinery and pervasive problems of equipment and infrastructure maintenance have resulted in very low returns to this part of public investment in agriculture.

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[5] Examples can be found in Nigeria (irrigation), in Ghana (state farms), in Ivory Coast (sugar), in Congo, Ethiopia, and Zambia (all state farms), and in many other countries.

3. *Overinvestment in Peripheral Regions.*—Another feature of agricultural investment in the 1970's was an increased attention to marginal regions. This policy also stemmed from a variety of motives. The international donor community, disappointed with the observable trickle-down efforts of existing developing programs, began to put increasing emphasis on equity considerations. These included a focus on income distribution, on low-income target groups, and on basic needs. The widening food gap, which came to full public attention during and after the drought of the early 1970's, gave rise to a new emphasis on food production and the goal of food self-sufficiency. Export crops were denounced as being at the root of the emerging food shortage. Finally, many African governments, after a decade of development along the pattern set in colonial times, which implied a concentration on the export-oriented sectors and regions, felt obliged to give greater attention to the needs and aspirations of the peripheral regions of their countries in order to maintain social harmony and political unity. These motives converged to effect a shift of resources towards marginal and peripheral areas. These areas were mostly marginal in economic terms, suitable only for food crop production. Unfortunately, moreover, many of them had less potential even for food production than some of the more developed areas, located as they frequently are in zones of low and unreliable rainfall. Moreover, knowledge about technical and social conditions of production is very imperfect with respect to these marginal areas. The result has been a low rate of success in these projects. Where social objectives have been successfully met, the cost in terms of foregone production has been significant. In terms of the share of the new investments absorbed in the 1970's, this policy was applied unevenly in different countries, but was probably not negligible in some of the poorer ones.[6]

4. *Over Reliance on Parastatals.*—Parastatals are, as noted earlier, active in agricultural marketing. But that is not all. Government agencies are involved in virtually every aspect of rural development. They are frequently the sole suppliers of agricultural inputs—seed, fertilizer, implements, etc. Regional development agencies are responsible for extension activity and rural credit, and for land clearance, preparation and irrigation works. It is no exaggeration to call these parastatals the organizational workhorses of the rural development effort in Africa. Nor is it any exaggeration to say that they have almost everywhere performed poorly.

There are many reasons for the poor performance of these agricultural parastatals. Like all parastatals, they lack skilled management and skilled manpower at middle levels. They are forced to work with budget allocations which are inadequate and uncertain. They are given conflicting objectives. They are generally subject to political decision-making. For these and other reasons, they normally limp along, at minimal levels of efficiency: they are overstaffed, underfinanced (especially for non-salary items) and lacking clear mandates.

The agricultural parastatals have special difficulties, on top of these general problems. Their task is often more demanding. Marketing agencies must service large areas, with dispersed farming populations, often without the benefit of intermediaries to perform bulking and transport functions. They must accommodate to harsh timing requirements—for financing, storage, provision of sacks and other inputs, for example, in isolated environments with poor telecommunications, any weaknesses in management (lack of initiative, corruption, lack of technical competence) are not readily self-correcting; they may go undetected and uncorrected for a long time.

Moreover, it is particularly difficult to attract qualified staff (managers, technicians, accountants) to agricultural agency sites which are usually in remote locations. Besides the lack of urban amenities, there are factors such as lack of schooling facilities (secondary schools, in particular), lack of employment opportunities for wives (many of whom hold jobs) and the fact that most countries are unwilling or unable to offer substantial hardship or displacement allowances.

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[6] In addition to relatively low yield in terms of output, these projects, even if "successful," increased vulnerability and dependence, as is suggested in the following piece of analysis from a World Bank study of Malian agriculture.

"Most poor farmers are poor because the resource base in their home area is poor. Efforts to improve their productive base will require higher investment outlays per capita than in the more favorable areas, which also means that these projects cannot be expected to return much, if anything, of the invested resources in the form of taxes or levies; many would probably remain structural recipients of subsidies. In a country with extremely weak and deteriorating fiscal resources, this policy is bound to lead to an intensification of its dependence on external financial assistance; at the same time, such a policy contributes to the petrification of the existing agricultural structure with relatively too many people living in areas that are marginal or at least suboptimal in economic terms; finally, focusing development efforts on poor areas will further destabilize agricultural production, in particular food production, as the resource-poor areas are characterized by low and uncertain rainfall and correspondingly erratic yields."

It should be no surprise then, that the agricultural parastatals have been generally unable to adapt bureaucractic financial and administrative procedures to the demands of commerically-oriented operations. Government marketing monopolies have had universal difficulties in dealing with questions of price and quality differentials, transport organization or pricing, access to timely and regular sources of credit, and covering of deficits induced by government price policy requirements or government failure to pay debts to parastatals. Input supply parastatals, similarly, have been frequently crippled by inadequacies in operating expenditures (especially for items like gasoline and spare parts), by financing delays deriving from linkage to the budget cycle, and by added problems due to subsidization of inputs which assures "excess" demand. They have very rarely been able to deliver what farmers want when they want it.

5. *Overemphasis on Extension as Compared to Research.*—There has always been some diversity in approaches to rural development, but generally in Africa the most popular instrument has been the agricultural extension approach: parastatals spread new technology by extension workers and by offering supply to inputs, credit and a marketing outlet for the crop(s).

Experience and common judgment suggest that there are three preconditions for a successful agricultural extension effort: an appropriate incentive structure (good prices and secure marketing arrangments); an effective delivery capacity by the extension organization; and a "package" to extend. In fact these preconditions coexist rarely in African circumstances and this explains why so much of the agricultural development expenditures of the 1970's has had such low yields.

No extension effort can be successful if the price of the target crop is fixed by the government at a level which makes the crop unattractive for farmers. Although this appears self-evident, examples abound of extension services fighting an uphill battle against low producer prices, thereby being deprived of any potential effectiveness.[7] Marketing uncertainties have the same counterproductive effects on extension programs. In addition, rural development parastatals which run extension operations suffer the organizational weaknesses characteristic of all public sector agencies, but these are particularly telling in extension work which involves many employees, dispersed over large distances, requiring physical mobility and a capacity to adjust to a diverse and rapidly changing environment. Also, these organizations suffer from frequent management scarcities, as well as enormous budgetary and accounting problems. The skill level of most agents is too low for what is asked of them. The extension agent's job, properly done, is immensely demanding. It requires good knowledge of farming technology and local farming systems, good communications skills, and the ability to adapt the message to varied local circumstances. But many of the middle and lower-level staff are neither capable of passing on complicated information to farmers and answering difficult questions, nor are they motivated to do so, even if they had the means.

Problems of management motivation and of qualification are most everywhere reinforced by a lack of mobility. As noted earlier, non-salary recurrent budgets are very often tight and the budget strains of the 1970's accentuated this problem. The sphere of action available to the extension staff has thus became severely circumscribed because fuel for vehicles, or simply per diem allowances, are lacking. In Kenya, in the early 1970's for instance, some extension staff were operating only the first 2 months in a 6-month budget period due to a lack of fuel for their vehicles, and the situation in Kenya is better than in most other countries.

To the problem of incentives weakness and organization must be added the third difficulty: lack of a suitable message to extend. There are some exceptions, but by and large research has failed to provide enough solid and reliable packages for the extension systems to propagate.

The inadequacy of the technical packages proposed and propagated throughout the 1970's was mainly rooted in the fact that they failed to be related to the concrete farming systems in each area, having been developed on a crop-by-crop basis in research stations. Little account was taken of the labor requirements of the technical packages proposed (both overall and with respect to seasonal peaks and conflicts with requirements of other crops), of land tenure problems (communal and individual plots and their use of specific crops), of the division of labor between the sexes, of inter-cropping patterns practiced in traditional farming, and of farmers' perception of risk. All these technical constraints have become better understood as rural development projects are implemented. In many cases it was found that farm-

[7] A parallel observations is that government use of extension staff to secure delivery to the official marketing agency at official [lower than free market] prices often undermine the credentials of the extension staff with farmers.

ers' resistance to proposed technical packages was perfectly rational from their point of view, which integrates all economic and social aspects relevant to them. The advantage of intercropping was the first point to be conceded; other points were the refusal to follow early sowing and high density planting recommendations, which conflicted with farmers' risk-averting strategies.

There are some places where technological packages have been right and incentives and organizational factors conducive; successful extension has resulted. The most famous is the Kenya tea case. But there have been few such examples. In these circumstances, and given the inadequacies of research on new agricultural technology, it seems clear that much of the money and effort that went into extension operations was wasted. Greater efforts should have gone into research and less into extension.

The thrust of these remarks is that policy inadequacies have had a great deal to do with the poor food production record of the past decade. This is discouraging in that it implies lost opportunities and wasted resources. But it is also hopeful. It suggests there's nothing inevitable in past trends. With appropriate shifts in orientation and changes in policy most African countries can substantially increase their rate of growth of food production, and reduce their degree of food dependency. Really dramatic increases may have to await new technological breakthroughs. But even on the basis of what is now known, great improvement is possible. What is required more than anything else is the release of the energies of individual smallholders. And for this to happen what is most needed is simply that governments give these farmers greater scope to increase their incomes. While much government expenditure is still needed for roads and research especially—agricultural progress now depends primarily on a fuller mobilizatioin of private energies via provision of economic incentives.

Senator KASSEBAUM. Thank you very much, Dr. Berg.
Dr. Loevinsohn.

STATEMENT OF ERNEST LOEVINSOHN, ISSUE ANALYST, BREAD FOR THE WORLD, WASHINGTON, D.C.

Mr. LOEVINSOHN. Senator, it is a pleasure to appear here today on behalf of Bread for the World. What I would like to do is very briefly look at the food production picture in sub-Saharan Africa and then focus more on the question of what can be done about it, with particular reference to some legislation now before Congress.

The food production picture in sub-Saharan Africa is, unfortunately, very easy to summarize. Per capita food production levels are low, and they are declining very rapidly. In fact, the current level is 25 percent less than it was during the 1961 to 1965 period, and sub-Saharan Africa is the only major region of the world to suffer a long-term decline in per capita food production. That is a very discouraging statistic, and the hunger and human suffering that are behind it, are, of course, even more discouraging, but I think it would be wrong to conclude that sub-Saharan Africa is a basket case.

On the contrary, there is tremendous potential for development, and some striking successes have already been achieved by the development community, and especially by the African people. For instance, average life expectancy for people in the sub-Saharan region, although it is still very much too low, has been raised by over 20 percent since 1960. Life expectancy is perhaps the key social indicator.

With regard to food production in Africa, the main question I think we ought to focus on is what can be done to improve it. Bread for the World's view is that the crucial step is to get tools, seeds, credit, fertilizer, and other productive resources into the hands of the rural poor.

This is an area in which U.S. development aid could be very helpful, but unfortunately U.S. aid has had only a limited impact on Africa's rural poor.

It may seem that the people to look to for efficient production are the larger, wealthier farmers. In fact, however, it has been noted in many areas that the small farmers are the more efficient ones. For example, the World Bank report which Dr. Berg helped prepare notes that in Kenya farms of less than one-half hectare, that is, less than 1¼ acres, produce 19 times as much per hectare as farms of over 8 hectaries. Bread for the World's advocacy of the small farmer-oriented development strategy does not, however, rest primarily on maximizing aggregate production, on the idea that we should increase total production as the main goal. In this we probably differ from some of the remarks you have just heard.

Simply increasing the total output of farm produce, is not enough. Unless poor people themselves gain resources to buy or produce more food, they will continue to go hungry and the high rates of population growth which hunger helps produce will also continue.

Some of the recent scholarship in the area has been rather clear on this point, especially A. K. Sen's distinguished book on "Poverty and Famine," which was recently published by Oxford University Press. Sen has emphasized that it is not food production that is the main factor in determining the extent of starvation. In his analysis of a series of famines, two of them in Africa, he noted that it is a question of the entitlements—that is, the economic clout—that people have which determines whether they go hungry or not.

In the case of the Bengal famine in the 1940's, which he studies most closely, food availability actually increased by 9 percent compared to a previous year when there was no famine, but some 3 million people died in large part because the war was forcing prices up and their economic clout was decreased correspondingly.

So it is not enough to look at the aggregate food production and say, we should do whatever we can to increase total production and never mind who is actually producing it. Unless it is the poor who are gaining economic resources, they will continue to be hungry. And the reason we are interested in African food production is primarily the alleviation of hunger and malnutrition, and not simply to see production statistics increase.

So Bread for the World's advocates that we ought not to go after aggregate production as the be-all and end-all but rather strive to increase production with emphasis on small farmers because they are the people who most need higher real incomes.

How effective has U.S. development aid been at reaching small farmers in Africa? I want to suggest that it has not been as effective as it could be. But in focusing on needed reforms one should not overlook AID's very substantial accomplishments, especially in the field of health. We do not want to be part of the chorus that is going around indiscriminately attacking AID.

The most common reason why AID projects have bypassed poor farmers in Africa is the agency's preference for a top-down approach. Instead of financing credit, tools, training, and so on for poor farmers themselves, AID concentrates on providing goods and

services to African government bodies. It is claimed that this will ultimately benefit the poor.

The best way to describe AID's approach is as a bureaucratic trickle-down strategy. And the most common form of aid to governments is consultants, under the heading of "technical advisers."

The cost to AID of these consultants is rather large. It comes to about $500 per consultant per day. Now, supplying these consultants is not always a mistake, but one wants to consider the costs.

AID's emphasis on the top-down approach is quite pronounced. Bread for the World did a study of 40 randomly selected projects from among the 422 AID development projects begun in fiscal year 1981 and fiscal year 1980.

In this sample, under 25 percent of AID expenditures went to finance goods and services primarily used by the poor themselves. Poor here is defined in terms of World Bank standards, that is, those who are absolutely or relatively poor. Give, that less than 25 percent went to finance goods and services for the poor themselves, it follows that in the great majority of cases the people receiving AID-financed goods and services were not poor.

As a concrete example of the bureaucratic trickle-down approach, one might consider the $5 million spent by AID to provide surveys, assessment, studies, and seminars to government officials in Mauritania to try to improve that government's administrative procedures.

Now, it would be dogmatic to assert that the top-down strategy which this exemplifies is never appropriate, and we certainly do not want to say that there should never be any aid to bureaucracies or to take any across-the-board position. But it is a question of emphasis, and it is questionable whether AID's very heavy reliance on the bureaucratic trickle-down approach is the most effective way to aid Africa's small farmers.

The government bodies which AID is helping are not generally oriented toward providing assistance to the rural poor. And strengthening these bodies will not automatically result in any assistance to the rural poor. They may well continue their policies of directing benefits to the urban elite and, to a lesser extent, to the rural elite.

Governments such as that of Zaire have become notorious for their demonstrated neglect of their poor rural citizens. But even governments such as that of Tanzania, which is noted for its commitment to equity in economic development have developed bureaucratic elites whose interest in providing benefits to the poor is limited.

A few months ago I was looking at some AID projects in the Arusha region in northern Tanzania. One of the things that AID is doing there is helping the authorities in the Mbulu District to draw up a 20-year plan. Now, people who have been in Tanzania recently will agree that one of the last things that bureaucracy-bound Tanzania needs is another long-range governmental plan.

But even aside from the question of whether or not we should have been working on a 20-year plan, the actual priorities of the Mbulu government were, for example, electrifying Mbulu town, providing electricity for the government buildings, and other things that had no real bearing on the welfare of the rural poor in Mbulu.

And Mbulu is a district like others in that region where malnutrition has been increasing.

So our assistance in helping the Mbulu district authorities to draw up this 20-year plan, aside from the problem that it may be overbureaucratic, is aiding them in a strategy which is not poverty oriented.

Some have attempted to defend the top-down or bureaucratic trickle-down strategy on the grounds that African governments need to reform their policies so as to increase the economic incentives for farmers to produce more.

This, of course, was the main theme of what we have been hearing today and of the World Bank's recent report on sub-Saharan Africa. Some have argued that working with bureaucracies is the best way for an aid agency to help bring about the necessary policy reforms. And again one certainly would not want to say that this is never the right approach.

But in general, policy reform in Africa and, I would imagine, anywhere else is likely to depend more upon the balance of internal political forces than on outside advice.

In particular, the "bias against agriculture," which the World Bank report laments is generally due to the greater power of urban elites compared to the power of the rural masses. And strengthening the position of the rural majority is, therefore, likely to be the most effective way in the long run to promote the kind of policy changes beneficial to the rural sector.

Conversely, strengthening the relative economic and political position of the urban elite, which is what the top-down aid tends to do, may often inhibit the desired policy changes.

As I mentioned earlier, I do not want to join the anti-foreign aid chorus, and Bread for the World recognizes that AID has made great strides in orienting its policies toward the needs of the poor since the New Directions legislation was passed in the mid-1970's.

Unfortunately, AID documents suggest that the Agency's leadership is now retreating from earlier administrations' commitment to New Directions and the rural poor.

AID Administrator McPherson's program and budget guidance cable to the missions for fiscal year 1983 sets out his 10 main priorities. Considerations of economic equity are not mentioned except in the context of laying greater stress on general economic growth. Bread for the World finds this a somewhat worrisome development, though we have to admit that the signals are mixed.

In terms of congressional action, however, we are encouraged to note that the Foreign Relations Committee has demonstrated its commitment to emphasizing poverty alleviation in U.S. development assistance programs.

As I am sure you know, the committee recently approved an amendment sponsored by yourself, Senator Mathias, Senator Cranston, and Senator Sarbanes, which directed that 50 percent of AID's development aid spending go to finance goods and services which "directly benefit" those living in absolute or relative poverty.

Special emphasis was placed on hunger in sub-Saharan Africa and on aid to women engaged in agricultural production in that region.

This approach leaves AID plenty of flexibility. It leaves them the flexibility which they need in some cases to use a bureaucratic trickle-down approach or whatever else may work. Spending on research, technology transfer, roads, other infrastructure, can all be counted within the 50 percent as long as the spending directly benefits the poor. So that as long as it is a road, say, which is primarily used by poor rural people, it would count as directly benefiting the poor.

AID has the other 50 percent of development aid and the full $2.6 billion economic support fund to use for aid which need not benefit the poor directly. So the amendment is a modest piece of legislation. But we still think it was an important step in the right direction.

We would prefer tougher language than actually went through. But as a compromise, it had the virtue of having gone through the committee without any dissenting votes and with administration approval.

The problem in terms of technical legislative matters is that this amendment is attached to the foreign aid authorization bill which seems to be stalled. We would urge you to work as hard as you can for speedy passage of this amendment, using whatever legislative path is the best. We think that this is an important matter.

Sitting here in Washington, it is hard to imagine the effects of U.S. legislation on people of a distant continent. But for the people involved, for a poor family living in an area where perhaps half the children die before they are 5, a determined effort to get our aid through for the rural poor and to make them more economically productive would make a very great difference.

It is because of these human consequences that we believe that getting United States aid through to the poor is a matter of priority. Thank you.

[Mr. Loevinsohn's prepared statement follows:]

PREPARED STATEMENT OF DR. ERNEST LOEVINSOHN

On behalf of Bread for the World, I would like to express appreciation for the opportunity to appear before this panel today. As you may know, Bread for the World is a Christian citizens' movement which seeks to alleviate hunger by influencing public policy. We have members in every Congressional District in every state, with a total of about 42,000 members nation-wide.

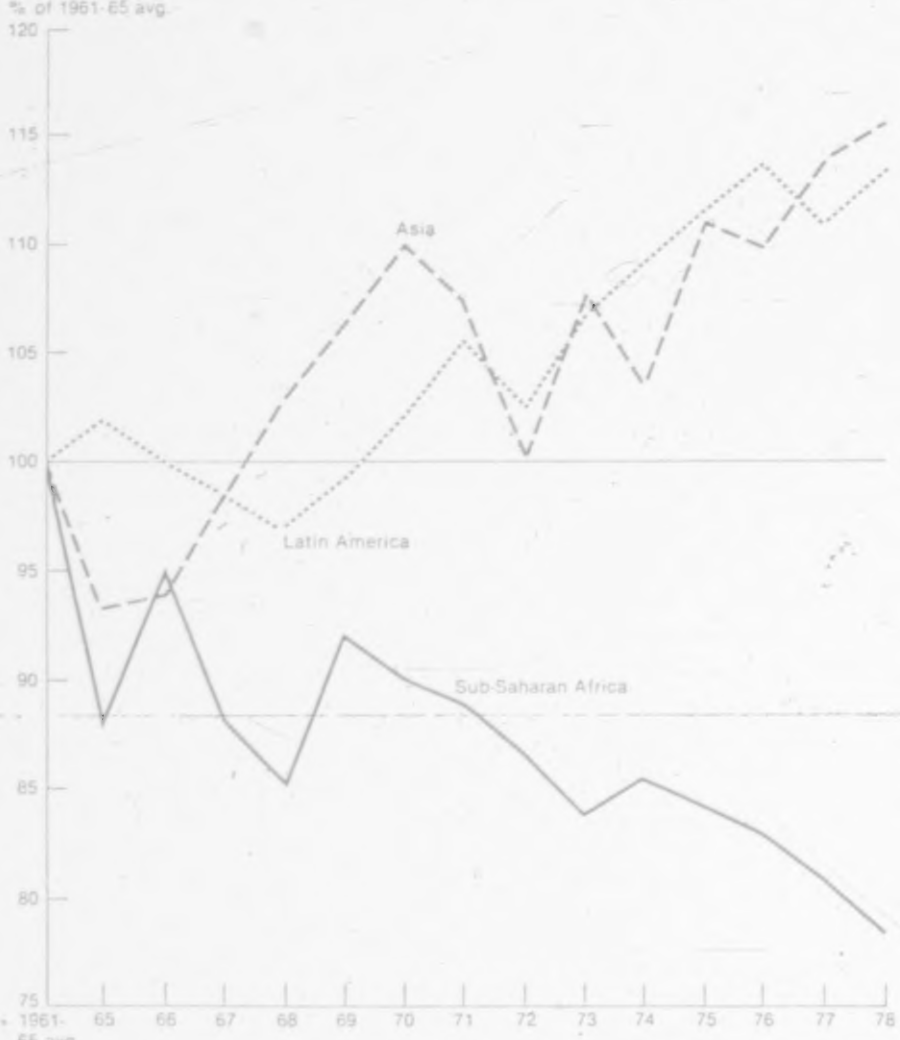
I will briefly describe the food production picture Sub-Saharan Africa and then go on to focus on the question of what can be done about it, with particular reference to legislation now before Congress.

THE AFRICAN FOOD PRODUCTION PROBLEM

The food production picture in Sub-Saharan Africa is easy to summarize. Per capita food production levels are low and they are declining rapidly. (See graph on the following page.)

Sub-Saharan Africa

Index of Food Production per Capita



Source: Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture, Indices of Agricultural Production.

Reprinted from Food Problems and Prospects in Sub-Saharan Africa (USDA, 1981)

In the other major regions of the world per capita food production has increased during the past two decades. But as the graph shows, in Sub-Saharan Africa per capita food production has been falling so quickly that by the end of the seventies it was almost 25 percent below the 1961–65 average level.

To help meet food needs, countries in the region have resorted to large-scale grain imports. Sub-Saharan Africa imports some 5 million tons of grain annually, roughly four times as much as it did 20 years ago. Because of price increases the cost of these imports is more than 10 times as high as it was twenty years ago.

Despite these imports food availability in the region remains tragically low. Calorie supply per capita is estimated to be 11 percent below what would be required to maintain health at normal levels of activity. The situation is worse in the region's poorest countries. In Chad for example calorie supply per person is 26 percent below the required level.

These are very discouraging statistics, and the hunger and human suffering behind them is difficult to face. Yet it would be wrong to conclude that the situation is hopeless. Sub-Saharan Africa is a region rich in resources, and there are great possibilities for development. Although much remains to be done some important success have already been achieved. For instance, average life expectancy for people in Sub-Saharan Africa, although it is still too low, has been raised by over 20 percent since 1960.

NEED TO FOCUS ON THE RURAL POOR

With regard to food production in Africa the main question before us is "What can be done to improve it?" In Bread for the World's view the crucial step is to get tools, seeds, credit, fertilizer and other productive resources into the hands of the rural poor.

This is an area in which U.S. development aid could be very helpful. Unfortunately, as I will be showing, American aid has focused on Africa's rural poor only to a very limited extent.

Why should efforts to increase African food production focus on the rural poor? It may seem that the people to look to for efficient production are the larger, wealthier farmers. In fact however it has been noted in many areas that the smaller farmers are the more efficient ones. For example the World Bank reports that in Kenya farms of less than one-half hectare (i.e. of less than 1¼ acres) produced 19 times as much per hectare as farms of over 8 hectares. (This could not have been due to differences in the quality of land, for the relationship held when the small holdings and the large holdings were of equal quality.)

Bread for the World's advocacy of poverty-oriented aid does not however rest primarily on the assertion that poor farmers will be most efficient in increasing food production. For simply increasing aggregate production is not enough. Unless poor people themselves gain the resources to produce or buy more food they will continue to be hungry, and the high rates of population growth which hunger helps produce will also continue. Recent scholarship, especially, A. K. Sen's "Poverty and Famines" (Oxford University Press), has emphasized that the extent of hunger and starvation is not dependent simply on the overall food supply, but rather on whether poor people have the economic resources to obtain food. To overcome hunger in rural Africa then requires aid which will help the poorest farmers to produce more food, or more non-food crops which they can sell to buy food.

ROLE OF U.S. DEVELOPMENT AID

How effective has U.S. development aid been at reaching small farmers in Africa? In answering this question I am going to be somewhat critical of the U.S. Agency for International Development (AID). I want to stress however that in focusing on needed reforms, we should not overlook the agency's very substantial accomplishments, especially in the field of health.

AID rhetoric has often stressed aid to the small farmer, but in practice there have been a number of problems. First, AID's definition of "small farmer" is often so broad as to include the relatively prosperous. In Kenya for example, AID adopted the standard that any farmer with 8 hectares (about 20 acres) or less would count as a small farmer. However most Kenyan farmers have two hectares or less. An AID evaluation of the agency's maize research program in Kenya remarked "It is not difficult to see how the 'eight hectare' definition could lead to research and recommendations inappropriate to the poor majority, i.e. those with less than two hectares of land."

The most common reason why AID projects bypass poor farmers in Africa is the agency's preference for a "top-down" approach. Instead of financing credit, tools,

training, or other resources for poor farmers themselves the agency concentrates on providing goods and services to African government bodies, claiming that this will ultimately benefit the poor. The agency's basic strategy can be described as a bureaucratic trickle-down approach. Probably the most common form of U.S. aid to government bureaucracies is the provision of consultants, usually at a cost to AID of $500 or more per consultant per day.

AID's emphasis on the top-down approach is quite pronounced. Bread for the World studied the project budgets of 40 randomly selected [1] projects from among the 422 AID development aid projects begun in fiscal 1980 and fiscal 1981. In this sample under 25 percent of AID expenditures went to finance goods and services primarily used by the poor themselves. Poor persons were defined as those who would be classified as absolutely or relatively poor by World Bank standards. In the great majority of cases the people receiving AID-financed goods or services were not poor.

As an example of the bureaucratic trickle-down approach, consider the $5 million spent by AID to provide such items as surveys, assessments, studies, and seminars to government officials in Mauritania to try to improve that government's administrative procedures.

It would be dogmatic to assert that the top-down strategy which this exemplifies is never appropriate. But it is questionable whether AID's very heavy reliance on the bureaucratic trickle-down approach is the most effective way to aid Africa's poor farmers.

The government bodies to which AID is providing assistance are not generally oriented toward benefiting the rural poor. It is therefore unlikely that strengthening these bodies will yield substantial benefits for poor farmers. Governments such as that of Zaire have long demonstrated neglect of their poor rural citizens. But even governments such as that of Tanzania, noted for its commitment to equity in economic development, have developed bureaucratic elites whose interest in providing benefits to the rural poor is limited. For example AID has been assisting the authorities in Mbulu district in the Arusha region of Tanzania in drawing up a "twenty year plan." Now it might be thought that one of the last things that bureaucracy-bound Tanzania needs is another long range plan. But even aside from that, the priorities chosen by the Mbulu government authorities in drawing up the plan (e.g. electrification of Mbulu town and the government buildings) are not oriented to the alleviation of poverty. It is unlikely therefore that AID's assistance in helping to draw up the plan will end up helping the poor rural people of Mbulu district.

Some have attempted to defend the top-down approach to stressing the need for African governments to reform their policies so as to increase the economic incentives for farmers to produce more. The need for policy reform was a main theme of the World Bank's recent report Accelerated Development in Sub-Saharan Africa. It has been argued that working with bureaucracies is the best way for an aid agency to help bring about the necessary policy reforms.

This may on occasion be the best approach to promoting policy reform. In general however policy reform, in Africa as elsewhere, is likely to depend more on the balance of internal political forces than on advice from outsiders. In particular, the "bias against agriculture" which the World Bank Report laments is generally due to the greater power of African urban elites compared to the power of the rural masses.

In general therefore strengthening the position of the poor rural majority is likely to be the most effective way to promote government policy changes beneficial to the rural sector. Conversely, strengthening the relative economic and political position of the urban elite, as top-down aid tends to do, may often inhibit the desired policy changes.

As was mentioned earlier, in being somewhat critical of AID policies in Africa Bread for the World does not mean to join in the anti-foreign aid chorus. We recognize that the agency has made great strides in orienting its policies toward the needs of the poor since the "New Directions" legislation was passed in the mid-seventies. Unfortunately AID documents suggest that the Agency's leadership is now retreating from the poverty-orientation mandate of the New Directions legislation. For example in his program and budget guidance cable for fiscal 1983, AID Administrator McPherson sets out his ten main priorities. Considerations of economic equity are not mentioned, except in the context of laying greater stress on increasing general economic growth.

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[1] Projects were selected randomly within each fiscal year, except that projects for which project papers were not on file were excluded from the sample.

In terms of congressional action, however, it is encouraging to note that the Foreign Relations Committee is committed to emphasizing the alleviation of poverty in U.S. development assistance programs. The committee recently approved an amendment sponsored by Senators Mathias, Kassebaum, Cranston, and Sarbanes. The amendment, which was attached to the foreign aid authorization bill, directed that 50 percent of AID's development aid spending go to finance goods and services which "directly benefit" those living in absolute or relative poverty by World Bank standards. Special emphasis was placed on alleviating hunger in Sub-Saharan Africa and on aid to women engaged in agricultural production in the Sub-Saharan region.

This amendment leaves AID plenty of flexibility. Spending on research, technology transfers, and infrastructure can all be counted within the 50 percent as long as such spending directly benefits the poor.

Obviously a key question is how strictly the phrase "directly benefit" is construed. The report accompanying the bill sets out a definition that is somewhat looser than Bread for the World would like. We would prefer the tougher language proposed in bill S. 1675, which has been sponsored by 38 Senators, including Senators Hatfield, Dole, Danforth, Leahy, Hollings, Dodd, and Lugar. Nevertheless the amendment which was approved by the committee is certainly a step in the right direction. It does emphasize aid that benefits the rural poor directly, as opposed to the bureaucratic trickle-down strategy. Furthermore, as a compromise, it has the virtue of having gone through the committee with Administration approval, and without any dissenting votes.

Bread for the World urges you to work for speedy passage of this legislation.

Sitting in Washington, it can be hard to imagine the effects of U.S. legislation on the people of a distant continent. Yet for the impoverished family living in a rural area of Africa where almost half of the children die before they are five a determined effort to get U.S. aid through to the rural poor could make a very great difference in their food supply, their livelihood, and the health of their children. Because of these human consequences getting U.S. development aid to the poor is a matter of urgency.

Senator KASSEBAUM. Thank you, Dr. Loevinsohn.

Dr. Stryker.

STATEMENT OF J. DIRCK STRYKER, ASSOCIATE PROFESSOR OF INTERNATIONAL ECONOMIC RELATIONS, FLETCHER SCHOOL OF LAW AND DIPLOMACY, TUFTS UNIVERSITY, MEDFORD, MASS.

Mr. STRYKER. Thank you, Senator Kassebaum.

One of the disadvantages of coming last in a series of panels is the fact that many of the things that one might have said have already been said. Most of these are summarized in my statement.

Senator KASSEBAUM. I know just how you feel, because I sit usually way over there, and the questioning gets around to me and all the questions that I had thought of have been asked.

Mr. STRYKER. The advantage, however, is that one is able, to some extent, to dovetail one's comments and perhaps to respond to some of the other things that have been said. In any case, there are several points that I would like to make that I consider to be very important.

One is that I would like to emphasize the difficulty of working in much of Africa. In particular, the natural environment from a point of view of climate and soils especially is not one over much of the area which is conducive to agricultural change. Much of the Green Revolution technology exists for environments that are quite different from those found in much of Africa and in which many farmers are currently cultivating. Thus there are no easy answers.

This is not true in all areas. There are areas where technology is directly applicable. But in much of the continent there are no easy

answers from a technical point of view, and this has greatly impeded the increases in productivity that could occur in agriculture, and particularly what I would call the intensification of agriculture.

One of the problems of dealing with agriculture in Africa today is that it is very extensive in nature. You have pastoral nomadic systems, extensive shifting cultivation systems, and very low population densities in many areas, which imply very high costs of infrastructure development for marketing, transport, services, and so forth.

So the difficulties that lie in the way of intensification, I think, provide a very severe natural constraint at the present time and a constraint about which we do not have a great deal of knowledge as to how it can be overcome.

A second point is that one of the ways in which the natural environment can be altered, which is very important in some areas of the world for increasing food production, is through irrigation. Many regions of the world where irrigation has been developed have become high-yielding areas with a large degree of intensification. Many things are possible there that are not possible where you are subject to the vagaries of fluctuating rainfall.

The cost of irrigation in Africa is very high. It is particularly high in the semiarid areas where the most abundant water flows exist. The potential for increasing food production there is very great, but the costs are very high for a number of reasons: economic, technical, and so forth.

I recently participated in the economic analysis for the design of AID's integrated development project in the Senegal River Basin, which is one of the first of AID's projects dealing with major river basin development. Having calculated economic rates of return, I can tell you the costs are high and the rates of return are relatively low. But I want to come back to that in a few moments.

Another point that I would like to raise at this time is the fact that we have to treat very differently at least two groups of countries. One group, which lies in areas that are relatively favorably endowed with natural resources is able to produce enough food, does not necessarily produce all of its food needs.

One of the best examples, here, is the Ivory Coast in which I have worked over a number of years. The Ivory Coast has developed a very strong agricultural sector in many ways, founded principally on coffee and cocoa as cash crops, but also diversified to a very significant extent with a number of other crops grown by farmers primarily for cash. The Ivory Coast has not made a great deal of progress in overcoming its food needs, principally because it has shifted, as have many other countries, to rice and wheat and away from the traditional staple crops. In so doing, it has increased its imports.

Now, wheat is very difficult to produce in the Ivory Coast, and that country undoubtedly will continue to import wheat. Rice can be produced, but at quite a high cost. It is cheaper to grow coffee and cocoa for export to earn foreign exchange in order to import the rice.

I do not think that is a bad strategy. The Ivory Coast several years ago, after pursuing a rather difficult policy with respect to

rice production that was becoming very costly, ultimately abandoned that policy and opted to continue to exploit its comparative advantage in the kinds of agricultural activities for which its costs are low, to export these, and to use the proceeds to import food.

There are other countries, however, that have favorable environments such as the Ivory Coast and yet are not successfully exploiting those environments. Two of them that I happen to know best are Ghana and Guinea, both of which have precisely the kinds of problems that Professor Berg referred to earlier: overvalued exchange rates, very low producer prices, disastrous price structures generally that completely inhibit efforts toward development. There the problems are essentially policy related in nature. If you can overcome the policy problems, I think the agricultural sectors will take care of themselves.

If we look at the countries in the Sahelian areas or the countries where the natural environment is much less favorable, the problem is much more severe. I am not saying that the problem is easy where you have an overvalued currency. It is very difficult politically. But the problem is, in some sense, more fundamental where the basic resource endowment is poor and the ability of these countries to produce enough food for their population is very limited.

After independence most of the countries increased the size of their governments and major urban centers. During the 1960's, weather conditions were reasonably favorable, and the problem of food production was not particularly acute.

With the coming of the 1970's and the decline in food production, the necessity of importing greater quantities of food, and relying more on food aid, these countries were faced with very severe structural adjustment problems—problems which they have not yet solved. They have, in a sense, overextended themselves in a number of ways that have been quite wasteful. Most of these have been mentioned: heavy reliance upon public development agencies to increase production in agriculture, inappropriate policies, et cetra.

Perhaps of key importance has been the extensive use of input subsidies in some of the countries. In Senegal, for example, there is a very heavy fertilizer subsidy that completely inhibits private sector distribution and results, because of the severe financial constraints that it imposes on the government, in a breakdown of the whole distribution system.

I think the use of large input subsidies, particularly recurrent subsidies, has been very harmful for the distribution of these inputs and has largely prevented the private sector from coming in and taking over part of that role. This is one point that perhaps has not been brought out, and I would like to underline it.

Nevertheless, whether we are talking about development agencies, input distribution, or marketing, it is fairly clear that the public systems are breaking down. Particularly in the latter part of the 1970's, as one looks at country after country, we find that they simply are unable to continue to pursue the kinds of policies upon which they embarked in the 1960's.

Therefore, they are beginning to listen when people from outside say "Perhaps you ought to try the private sector." After all, the private sector in Africa in most areas is in many ways very well

developed. Marketing networks are extensive, well integrated, and usually quite competitive. In some cases, however, the people who participate in that marketing are ethnically and politically not the same as those who have political power in the central government, and this can create problems. But the basis for private sector marketing is certainly there. There is, however, a major need to reinforce, and certainly to avoid inhibiting, the development of that market.

There is some increasing realization, because the public systems have broken down, that public systems are increasingly defunct and simply cannot operate. They are financially insolvent and physically incapable of doing the kinds of tasks which have been set out for them.

I would emphasize, two additional points. One is that project and program aid can be used effectively to reinforce the tendencies that are already under way to move toward more appropriate policies. Aid can be effective particularly if there is coordination among donors so that they present a reasonably united front.

The U.S. Government, of course, obviously has to enter into a dialog with the African countries. It is extremely important that those countries have their own capacity to analyze and understand the policy environment in which they are operating. But at the same time, the U.S. Government can be effective in causing changes in policies when it uses the influence that it has through its aid program.

The second point that I would like to underline is the importance of investment, particularly in roads and irrigation systems. One factor that can fundamentally change the food production situation in a considerable part of Africa, particularly the semiarid regions, is the development of irrigation.

The experience so far has not been very good. There is a great deal to be learned. But there is evidence of successful adoption of irrigation techniques by farmers, farmers who come from systems that are totally different and who find themselves transplanting rice.

There is a Vietnamese agricultural technician in eastern Senegal who talks about farmers who initially took 100 days to transplant rice, and he had gotten them down to 49 days. He says that in Asia they do it in 12 days. This is an example of the kinds of things that can be done.

I think that there is a need—though I am afraid that AID under the current administration may be pushing to some extent, a bit too hard—investments to be productive. Fortunately, there is a lot more attention given now to economic rates of return than there was a few years ago. But I believe that the economic rate of return is going to be low on these irrigation projects for some time to come. The costs are high and they are up front. The benefits take time and are in the future. But there is a great deal of learning which is going on, and we do not really know how to value this learning process.

Even with a low rate of return, there are several criteria that should be fulfilled. First, profitability to the farmer should be high so that we will be motivated to undertake the changes. Second, the incentive structure that surrounds the project should be one that

reflects actual costs and benefits so that we do not gain high profitability for the farmer in a way that is not in the long-run interest of the governments and of the countries concerned.

Third, the recurrent cost burden should be kept down so that once the projects are completed, the governments will be able to continue to operate them with minimum public financing and maximum use of the private sector.

This is the project we have designed in the Senegal River Basin and is now in the process of negotiation with the countries concerned. If this project goes ahead, it could prove to be very interesting and possibly a prototype for further projects of this nature. But it will not enact a very great change in the environment, which I think in some of the very poor areas is quite important, and it is going to cost a lot of money.

Thank you very much.

[Mr. Stryker's prepared statement follows:]

PREPARED STATEMENT OF J. DIRCK STRYKER

The trends in food production in sub-Saharan Africa are very disturbing. It was the only region of the world, in fact, that experienced a decline in per capita production over the 1960's and 1970's. In at least 10 countries, per capita production at the end of the 1970's was less than 90 percent of the 1961–65 average. In 18 countries, per capita calorie intake is less than 90 percent of that considered to be a minimum nutritional standard. This leaves little margin for human error or natural disaster, as evidenced by the repeated calls of African countries for emergency assistance.

Rising demand for food in the face of falling production has resulted in rapidly increasing food imports. During the period 1960–79, imports of cereals into sub-Saharan Africa tripled in tonnage. This posted severe problems for these countries, many of which suffer from acute balance of payments problems and large fluctuations in export earnings.

Although population growth and urbanization have contributed to the food imbalance, these have not been excessive and it appears that most of the problem lies in the poor growth of productivity. African cereals yields, for example, are less than half those in Asia. Instead, the growth of production that has occurred has depended heavily on expanding the area cultivated, and, given the very extensive systems of cultivation used in Africa to maintain soil fertility, the land has been running out.

Intensification is possible through application of modern inputs, such as fertilizer and irrigation water, but this runs up against a number of important constraints. One of these is the low population density that exists where extensive agricultural techniques are practiced. This results in high costs of transport, marketing, input delivery, and the provision of public services.

A second constraint on intensification of agriculture relates to climate and soils. Where rainfall is sparse and variable, as it is in many areas of Africa, the potential for intensification is limited with existing technology. Yield response to fertilizer, for example, is very sensitive to the amount and timing of rainfall.

Third, even where it is possible to overcome limitations of rainfall through irrigation, the cost of constructing and operating irrigation systems is often very high, especially if these must be accompanied by dams and other structures for regulating river flows. It is precisely in the semi-arid regions that need it most, in fact, that the cost of irrigation is highest.

Not all constraints on intensification of food production, however, are technical or economic in nature. In a number of countries that should be able to satisfy most of their food requirements, agricultural production is lagging because of inappropriate institutions and policies. Many countries have tried to induce agricultural development through the use of public development agencies in rural areas. These typically provide extension services and distribute inputs. They may also purchase the crops that are marketed, or this may be done by another public agency specialized in marketing. Although some of these public development efforts have worked fairly well for a time, over the longer run they have tended to become bogged down in bureaucracy, nepotism, and mismanagement.

The emphasis on public sector interventions has often resulted in distortions of incentives to the private sector, robbing it of a significant role. Fertilizer subsidies, for example, not only create problems for the public agencies that frequently finance them, but also inhibit the distribution of fertilizer by the private sector. Often the whole distribution mechanism ultimately breaks down.

The greatest distortions probably occur in countries with exchange controls and quantitative trade restrictions. Producer prices, which are generally linked to world market prices at an increasingly overvalued exchange rate, decrease in relation to the costs of production. The public sector is less and less able to function and becomes further removed from private sector economic activity. Yet foreign aid and other investment must generally be channeled through the public sector. The result is an almost total breakdown in project aid.

Given these problems, the options available to the donors are not easy. It is difficult to come up with simple formulae saying, for example, that more aid should be given in program rather than project form. Nevertheless, it is possible to offer a few recommendations based on my experience.

1. *Projects in Africa should not be judged too severely on the basis solely of their low economic rates of return.*—The cost of investing in infrastructure or even more directly productive activities is often very high and the benefits strung out into the future because of the low density of population and economic activity. These costs will come down and the benefits will come sooner in future projects as the density of activity increases. But the economic calculation today usually neglects the value of the experience being acquired and the lessons being learned for the future.

2. *In the semi-arid regions of Africa, there are few alternatives to irrigation short of emigration.*—No one today really knows how to intensify rainfed agriculture in Africa where there are less than 800 millimeters of rainfall. Yet water resources are available in the river basins that are almost completely untapped and yet could contribute substantially to increasing the domestic supply of food. Developing these resources will be very expensive—in terms of both physical infrastructure and human lessons learned—but properly done it can slow, if not halt, the unending upward spiral of food imports.

3. *It is possible to increase the role of the private sector in marketing, processing, and input delivery.*—Numerous African government are becoming increasingly aware of the heavy cost and managerial burden imposed on them by trying to take on too many responsibilities associated with rural development. A number have publicly acknowledged the importance of greater private sector involvement and have taken concrete steps to increase it. This trend needs to be encouraged in the design of projects and conditions for program aid.

4. *Where large distortions exist in the structure of prices and other incentives, agricultural projects cannot succeed.*—A number of countries are finding their entire rural development programs bogged down in the face of serious distortions in incentives. Projects in these countries should not be funded until these distortions are substantially reduced or removed.

5. *Some governments are taking the painful, difficult steps involved in eliminating price distortions and improving agricultural incentives.*—This is probably the most difficult task that a government can undertake. Vested bureaucratic and political interests are entrenched at every step. Many governments are also prey to their own ideological history. Yet changes are taking place, if only slowly and hesitantly. They need to be encouraged in every way possible, because success might do more than anything else to increase food production.

6. *The donors must present a united front on issues of food and agricultural policy.*—There is a need for the donors to coordinate their positions on important policy issues. This is essential to push through difficult decisions. Frequently, this pressure is privately hoped for by nationals interested in the same reforms.

7. *The institutional and policy reforms induced by both program and project aid may often be more effective than the aid itself in promoting food production.*—Most agricultural development in Africa has occurred in response to market incentives and not to publicly financed projects. Since institutional and policy reforms are generally geared to improving market incentives, the payoff could be very important.

These recommendations or guidelines are presented here in fairly general form. Numerous specific examples can be cited to support them.

Senator KASSEBAUM. Thank you, Dr. Stryker.

Let me just mention a couple of things that I seem to have picked up from both panels. One is, the public system is breaking down. Exchange rates have been an enormous constraint on trade

and has contributed to unstable trade policies. And a dialog is in process on how to address this change. When Mr. Love spoke to this, certainly it was one of the important things that he believed was occurring, and that obviously has to be a factor.

I would like to also mention one thing that was stressed in the other panel but that you did not mention, Mr. Berg, when you were talking about the problems that are before us there now. And Ambassador Wisner had stressed the growth of population and urbanization, which I assume you would think are contributions to the problems we face there now.

Do you still believe that the others ought to take priority over the weak administrative structure?

Mr. BERG. I think the rate of growth of population has probably contributed something to this decade's performance problem. But I would not myself—although some people would, of course—I would not put it very high on the list of causal factors in this relatively short-run change that has occurred in the 1970's.

Senator KASSEBAUM. What about the urbanization?

Mr. BERG. I frankly do not how much weight to put on the urbanization problem. The doubt springs from memories of how fast markets developed in West African countries whose population grew extremely rapidly in the 1950's and 1960's, notably Ghana and Nigeria. These were prototype free-market countries of the 1950's, and production and marketing systems developed extremely fast to feed their urban populations.

It is hard to believe that these same kinds of changes would not occur elsewhere, in a more congenial policy environment.

That is not to say that continuing urbanization rates of 8 or 9 percent a year and 4 percent population growth rates are not going to cause food production problems, however.

Senator KASSEBAUM. But it is changing the policy in accordance with it.

Mr. BERG. And there is very little except to exhort people that we can do about the population thing at this stage. We can do some programing.

Senator KASSEBAUM. Do you feel that there is good coordination among the other donor nations in understanding some of this? Is there basic agreement on the problem? We are, I think, only about 7 percent in our contribution, are we not, among the donor nations?

Mr. BERG. There has been in the last year or two, much more discussion of donor collaboration, and greater awareness of the need for it. There are even a few cases of closer discussion about policy reform. But this has only just begun, and there are obvious obstacles. For on the continent as a whole?

Senator KASSEBAUM. Yes.

Mr. BERG. For example, the lead donor in a given country is normally keen to have the collaboration of other donors, but is unenthusiastic about subjecting its programs and policies to review by other donors. Moreover, not all donors see policy reform in the same way; the Nordic countries may not agree with the World Bank on the right medicine for Tanzania, for example.

But I do not know how my colleagues view it.

Mr. STRYKER. I think there is increasing consensus on the appropriate types of policies. There is increasing consensus that prices must reflect costs, that input subsidies have to be reduced.

Recently there was a meeting on the Senegal River Basin project with the French, the World Bank, and AID. There was general agreement to move in the direction of these more appropriate policy structures, and this reflected not only the feelings on the part of the local missions representatives, but pretty much the agencywide policies. So I think there is a basis for agreement there. It may be that in individual cases, however, there is not complete coordination.

Senator KASSEBAUM. I am sure that is very true. Do you see a way of your playing a role in trying to coordinate policy and in increasing the understanding of the importance of infrastructure? Dr. Stryker, you said, I think that you felt transportation was pretty good, that the marketing resources were good there in exchange. But is transportation not a real problem between the nations?

Mr. STRYKER. Transportation is certainly a problem. When I refer to the market, I meant that markets in Africa in most areas tend to be quite well organized in the traditional sector. Distances are long, however, and the quantities moved by the private sector, particularly bulk commodities such as cereals, tend to be still rather low. One of the factors that inhibits that movement is transportation costs, there is no question about it.

On the other hand, the costs of investment in transportation are also high. The distances are long and because the volume of traffic is relatively low, the benefits from transportation investment tends to be low as well. So it is a little like the chicken-and-egg problem. But, certainly, there is a need over the longer run to improve the transportation network.

Senator KASSEBAUM. Do you see the OAU pulling together and sort of being a body that can address this in a collective way? Or is that just too far off?

Mr. BERG. I am a little bit unclear about how you see this. OAU, of course, is distinct from the ECA people. The OAU has up to recently been preoccupied with political matters exclusively. It has extended its scope on economic matters but still is new at it, and thinly staffed.

Senator KASSEBAUM. I guess I believe that the political and economic realities, particularly in the African nations, go hand and hand.

Mr. BERG. The OAU has put forward, and the African chiefs of state adopted in 1980, the U.N. Plan for the Transport Decade for Africa. It was integrated into the Lagos Plan of Action, which was a political document by the OAU put out in 1980 in which transport has a major role. The Transport Plan put forward there was very substantial; it consisted of a long list of needed improvements.

This is a problem, of course. It is hard for an organization which reflects so many different countries, political wishes to set priorities.

So the Transport Decade is an enormous agenda—I don't remember the number for useful roads everywhere. And the Lagos Plan,

in fact, gave special priority to the Pan-African Highway, which most economists would say is a question to be looked at in detail.

Senator KASSEBAUM. I would be interested in knowing what you think of the relative priority of transportation.

Mr. LOEVINSOHN. I think stressing feeder roads especially could be very important. Again, it would be politically easy to link up major population centers and to keep those roads in relatively good repair. But feeder roads have a much lower political payoff, and I think anything we can do to emphasize feeder roads would help.

With regard to your previous comment about the OAU, I think that the OAU and the Economic Commission for Africa have played a positive role in one area, and that is, especially in terms of the Lagos Plan, highlighting the need to focus on agricultural production.

The disastrous agricultural production picture in the late 1960's and through the 1970's has now become a matter of common knowledge in African governments, but getting African governments to face this and to focus on agriculture as a development priority was partly the result of the critical mass generated within the OAU and, to some extent, the ECA.

Senator KASSEBAUM. Dr. Loevinsohn, let me follow up on your comments that we need to give emphasis to the agricultural rural poor, and that we need to get into their hands the ability to farm, the seeds, and the grain and equipment and so forth.

And I think this is true, and it is important, and I suppose it really is the smallholder concept. Mr. Love did mention they had been ignored.

But also, do you think there is the ability to use the assistance that we would send: the fertilizer and the equipment? How much ability is going to be there to use them effectively?

Mr. LOEVINSOHN. I think the question of absorptive capacity is a key question. I think it is absolutely the right question to ask. The question of how much farmers can absorb depends to some degree not just on how much we send them but the sort of package that they are getting. If we are talking about a complicated new package which requires major changes in their habits of cultivation, I think those have a lesser degree of success than packages which require more marginal adaptation on their part.

But what has been demonstrated, I would say, throughout the developing world is that small farmers are very responsive to changes that pay off for them. The rate at which, for example, the new high-yielding varieties in the Punjab went into production was very fast.

It had been said before then that the adoption of hybrid corn in the Midwest in this country was the classic case of agricultural adaptation, but smallholders in the Punjab region in India made us look bad by moving so quickly into these new varieties. Within a matter of less than, I believe, 5 years—something like 95 percent of the small farmers, those with less than 2 hectares, had adopted the high-yielding varieties. That was very quick adaptation.

So where there is an economic payoff for the farmer, I do not think we have to worry too much. Where there is no economic payoff, perhaps we should not be in there in the first place.

Senator KASSEBAUM. Dr. Stryker, do you have a comment?

Mr. STRYKER. Yes. I would like to make a point about the Punjab, which I frequently make and think it is very important. The payoff in the Punjab was so high because the British invested in irrigation in that area practically a century before the Green Revolution started. They took advantage of existing infrastructure to a large extent. There were some additions, but they took advantage of an existing irrigation infrastructure which made possible the exploitation of the Green Revolution in the Punjab area. By and large, that infrastructure simply does not exist in Africa today.

A second point I would make about the delivery of inputs is that, yes, one certainly wants to get inputs into the hands of farmers, but you have to be somewhat careful about how that is going to be done and what is going to follow. I do not think it necessarily is a very good idea to encourage adoption by farmers of fertilizers in areas where there is not enough rainfall and where that which exists is too variable, so that fertilizer usage simply cannot be supported over the longer run. In other words, who is going to pay for it after the first shipment has arrived? This is the kind of problem that has occurred again and again.

I mentioned the subsidies on fertilizers in Senegal. In part, this encouraged use of fertilizers in areas that really did not have adequate rainfall in order to make it profitable. The result was that the state agency which was in charge of the distribution of the fertilizer went bankrupt.

Senator KASSEBAUM. Dr. Berg, How would you address the importance of meeting basic human needs in policy emphasis?

Mr. BERG. Well, some of the things that were said earlier I would generally tend to agree with. In countries or in areas in which everybody is terribly poor, or almost everybody, it is awfully hard to know whose needs will be given priority. Then it is also true that it is not so easy to decide which needs are more basic than other needs.

What is now generally accepted by most of the people who have been toiling in this particular vineyard is that the best way to raise people's welfare, including the satisfaction of all of their needs, basic or not so basic, is to raise their productivity, hence their incomes.

This is really where everybody is now coming out: on the smallholder side. It is the best single way that you can increase African welfare is to raise smallholder farmer incomes. That has to be the center of strategy for people with all kinds of different views on other things.

Senator KASSEBAUM. In the first panel, I was asking about the mismatch between the consumer demands that have emerged for wheat and rice, and the importation of products versus what is locally available. Should we be shifting emphasis? Can the indigenous private sector really help work with the food processing and the technological training that is necessary in the rural communities as opposed to having larger agricultural projects that have tended to be the focus in the past for, a showcase, in many instances, for experimentation?

Do you see that as feasible and desirable? If so, what can we best do to accomplish it? Can we do it through AID programs?

Mr. LOEVINSOHN. If I might make a preliminary comment, one of the reasons we have this problem of taste is that it has been a deliberate part of American food aid policy to foster those tastes.

Senator KASSEBAUM. Through Public Law 480?

Mr. LOEVINSOHN. Exactly. The Public Law 480 administrators are very explicit. One of the things they would like to do is create markets by altering tastes.

Senator KASSEBAUM. Let me say, as a wheat state Senator, that is not all that bad. I do have mixed emotions on it.

[Laughter.]

Mr. LOEVINSOHN. Well, if we decide that that is what we want to do, maybe we do not want to go in the other direction and work against that. It may not be unreasonable to import wheat provided that the subsistence sector, or the small-farm sector, to be more accurate, is actually producing enough to make progress in alleviating hunger. Whichever aim we decide to pursue we ought to be consistent.

The idea that with one hand we are going to be promoting consumption of these foods and with the other that we are going to be trying to go in the opposite direction seems unreasonable.

Senator KASSEBAUM. Thank you.

Dr. Stryker.

Mr. STRYKER. I think there is substantial scope for increasing involvement in small-scale activities, particularly processing.

Let me give you a couple of examples. One is in the Senegal River Basin, particularly Senegal, where a good deal of the rice production has been concentrated. It has been difficult for years there to import small-scale rice hullers, which can be operated by one or two people and have a relatively low output but are the most efficient way to process rice. Instead, the rice has been processed in large government mills at very high costs. I mean costs that are five or six times the cost of the small hullers.

Well, one of the things that we have done as a condition of this project is to insist that the government promote the use of small-scale hullers and that they be the major mechanism for marketing and for processing.

There are plenty of other examples similar to that. Efforts have been made, for example, to try to produce a staple millet flour. One of the arguments that is used to explain why rice is substituted for millet is that millet takes 6 hours to prepare, when you include pounding and so forth, whereas rice takes you 20 minutes.

One of the solutions would be to process millet efficiently, but the problem is that millet flour tends to deteriorate very quickly. So there has been some effort by a firm in Dakar, Senegal, to produce a stable flour that can be stored on the shelf. I am not aware exactly of what the situation is regarding that research, but it is the kind of work that I think is deserving of support. I am not saying, however, that the opportunities to do something of this nature are very, very numerous.

Senator KASSEBAUM. That particular project is being underwritten by whom?

Mr. STRYKER. I am sure that the project has some French aid. I am not sure whether U.S. AID is participating or not.

Senator KASSEBAUM. But it is more or less being undertaken by the government?

Mr. STRYKER. By the government, though I am sure with some outside support, probably by the French, I may be wrong, however, because the French flour millers who run the large flour mill in Dakar may in fact not be very favorably disposed to producing better millet flour.

Senator KASSEBAUM. Dr. Berg.

Dr. BERG. I have just one general comment on all of this. It is all very well to say that we can do these things, and we can. But we cannot do them unless some big policy issues are confronted head on. Take the case of Nigeria. Nothing is going to make Nigerian farmers grow more local stables when every time the domestic price of rice rises a little bit they open the floodgates, allowing in imported rice at one-half the local price: That not only squeezes out Nigerian rice producers—no matter how they hull their rice—but it squeezes out millet and sorghum producers as well, so that any potential market for the consumption of those other basic stamples is affected.

I do not think any of my colleagues would disagree with that. But there is perhaps one thing that Dirck Stryker would disagree with. The problem with irrigation is not irrigation as such, it is really the scale of the irrigation: There is throughout the region, in West Africa particularly, but all over the continent, a lot of scope for increased irrigation, but largely of bottom land type irrigation, small pieces of land susceptible to water control.

But what every government in the world and every government in Africa in particular is anxious to do is to build a big dam. And there are other people around the world who are willing to help them do that. Now, that in itself is not so bad: as Dr. Stryker says, you learn things that way. But you learn that at awfully high costs.

The real danger is that local governments try to validate an irrigation decision and to make it pay off in some meaningful sense earlier than it should pay off.

To the extent that rice production programs are undertaken because water is available from big new dams, governments may find themselves with programs which produce rice, but rice which will almost surely need very expensive subsidies, and for a long time. The real danger, it seems to me, lies there. If in the eagerness to use available water supplies created through big irrigation schemes, schemes are launched which will then lead further down an unhappy economic road.

Senator KASSEBAUM. That is interesting, because, of course, irrigation in our country has resulted in some problems. We have extended our wheat production through irrigation and now we have an abundant supply and the demand is not there. And yet the acreage has continued to grow, largely through irrigation, and have a shrinking water table which is becoming enormously important.

But I suppose it comes down to the fact that, as you say, Dr. Berg, as much as we realize what is happening, it is a policy decision that basically is in the hands of the individual nations.

We can see the growing problems in agriculture in Africa as a whole, but Nigeria, of course, looks to Nigeria and Zambia looks to

Zambia and Senegal to Senegal. And individually, that is their responsibility.

How much we can be involved is really the question, whether it is through money, whether it is through our contributions to the IMF or the World Bank, or through AID.

Can we in some way direct our policies in a better direction that can lend an emphasis to this dialog?

Mr. LOEVINSOHN. Part of the problem in doing that is the ideal way to use our resources would be when the policy environment in a given recipient or potential recipient country improves, we would increase the amount of aid, and when it gets worse, we would decrease the amount of aid.

But, of course, as you are aware, the amount of aid is not primarily set on the basis of how affective their agricultural policy is. Speaking bluntly, a strategically important country like Somalia, will probably get a lot of aid so long as they keep giving us the use of their port facilities.

Senator KASSEBAUM. Dr. Berg just mentioned a project developing in Somalia which is privately run and which is important.

Mr. LOEVINSOHN. Exactly. But if the government decides tomorrow that that project deserves to have a 78-percent tax slapped on it, I do not think our foreign assistance budget to that country will alter, because unless they move Somalia to a different part of the world, it will still be geopolitically important to us.

So one thing that I think is important—and this is a question of degree—is to try to raise the profile of development considerations in development aid policy; in other words, not to have some arbitrary figures set according to which we are going to give so many millions of dollars to this country irrespective of how effectively the money will be used for development, but at least to make U.S. development aid budget decisions responsive to policy decisions of the recipient government. The administration will still have the very large Economic Support Fund as political walking-around money.

I think that making development aid budget decisions more solidly based on development considerations is an area where pressure from this committee in particular could be very helpful.

Senator KASSEBAUM. Thank you.

Do any of the panelists have a particular parting comment about what directions we could or should be considering? I think you have, of course, raised some very important questions, and as everyone has said, certainly the potential for enormous benefits is there.

But it will require a great deal of effort in the long term, and the seeds of the direction have to be planted now. And we do tend to shift our policies, certainly, one decade to the next to meet other various priorities, whether strategic, as you mentioned, Dr. Loevinsohn, or whatever they might be.

I am very appreciative of your taking the time to give us the benefit of your expertise this morning. Certainly, we will give your testimony further study here. And if you have any further suggestions that you believe might be beneficial, we would certainly always welcome them. Thank you very much.

This subcommittee is adjourned.

[Whereupon, at 12:15 p.m., the subcommittee adjourned, subject to call of the Chair.]

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